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Dr. James Marion Sims

The Father of Gynecology

JOHN SIMS was an Englishman, and his wife, Mahala Mackey, was of Scotch-Irish descent. Of this union was born, on January 25, 1813, in Lancaster District, South Carolina, James Marion Sims, who was destined to achieve the greatest reputation ever accorded to an American surgeon.

Young Sims attended the common schools in his native town and entered the Franklin Academy in 1825. Later he was sent to the South Carolina College, at Columbia, graduating in December, 1832. He attended lectures at the Charleston Medical School for a year and then went to Jefferson Medical College, Philadelphia, from which he was graduated as a Doctor of Medicine in 1835.

Immediately after graduation he began to practice in Lancaster, but became discouraged and moved, within a few months, to Mount Meigs, Alabama, where the people soon recognized him as being a good doctor. While living here he volunteered in the Seminole War, and when he returned he decided to make a start in the capital city of Montgomery, which he did in December, 1840.

He soon gained a reputation as a bold and successful surgeon and presently established a private hospital. It was in this hospital that he worked out what came to be known as the *Sims'* position and the *Sims' speculum*, and performed the first successful operation for vesicovaginal fistula in the history of surgery.

The story of the invention of the speculum which bears his name is most interesting and, like that of Laennec and the stethoscope, it shows how a keen and original mind will at once grasp the possibilities inherent in an apparently casual observation.

It seems that a woman who had been thrown from a horse came to Dr. Sims complaining of symptoms which suggested dislocation of the uterus. In examining her, the doctor placed her in the knee-chest position and inserted two fingers into her vagina to palpate the uterus. To his great surprise, air rushed into the vagina and fully dilated it, exercising sufficient pressure to replace the retroverted uterus. At once he thought of his numerous patients with vesicovaginal fistula—for the primitive midwifery of that day produced many of these unfortunates—and, leaving everything else, he rushed to a hardware store and procured a set of pewter spoons of various sizes. Hurrying back to the hospital he placed one of his fistula patients in the knee-chest position, bent the bowl and the end of the handle of a spoon at right angles to the shaft and inserted it into the

vagina. The pressure of the atmosphere did the rest and he uttered the classical exclamation, "I saw everything as no man had ever seen before. The fistula was as plain as the nose on a man's face."

But success in the cure of this distressing condition awaited the discovery of the silver wire suture, which was suggested by seeing one of the brass springs that were used on men's braces before the days of India rubber. The first wire suture was hammered out of a half dollar by a silversmith in Montgomery, and with these crude instruments Sims performed the first successful operation for vesicovaginal fistula, thus laying the foundation for his later fame.

In 1853 Dr. Sims established himself in New York City, where, in February, 1855, he organized the State Hospital for Women and became the founder of the modern science of gynecology.

In 1861 the doctor made his first trip to Europe, where he was received with the greatest enthusiasm and respect and operated in the presence of the most noted surgeons of that day. He made an excellent impression in medical circles and his fame was noised abroad, so that he was called in consultation by the best people all over Europe and enjoyed a very lucrative practice.

After the close of our Civil War, Dr. Sims returned to New York and resumed practice, but when the Franco-Prussian War broke out, in 1870, he returned to France and organized the Anglo-American Ambulance Corps, of which he became Surgeon-in-Chief. For this service the French Republic made him a Commander of the Legion of Honor.

From that time until his death, which occurred on November 13, 1883, he lived alternately in Europe and America, and wherever he was he was always keenly and actively practicing the profession he adorned. In 1876 he was chosen president of the American Medical Association and held many other official and private positions of great dignity and honor.

His preeminence was not alone in the field of gynecology, for he was one of the foremost general surgeons of his time, being one of the first to enter the abdomen, freely and boldly, in order to repair the effects of wounds in that locality. He was also among the first to remove the superior and inferior maxilla and to perform cholecystotomy.

His contributions to medical literature were not numerous, but were all of the highest importance and blazed the trail for the development of many fields in modern surgery.

It is not as an author, however, that Sims will be longest remembered, but as a consummate master of the art and practice of surgery. It has been said of him that he had "The brain of an Apollo; the heart of a lion; the eye of an eagle; and the hand of a woman."

Personally, Sims was most attractive. Endowed by nature with a splendid physique and a winning face, he combined unbounded and boyish enthusiasm and an impulsive, warm-hearted and affectionate nature with the greatest firmness and earnestness of purpose, so that he was not only respected and honored but loved by all who knew him.

This, then, is a little story of a country doctor who fought against poverty and obscurity, and, in his early days, even for health and life itself, and at last, by the sheer force of his genius, industry and attention to all things pertaining to his profession came to be welcomed as an associate by the medical giants of his day and as a guest by the Emperor Napoleon.

Everything flows from the application of trained intelligence, and invested capital is the result of brains. . . . The man of trained intelligence is a public asset. . . . We go forward only through the trained intelligence of individuals, but we, not the individuals, are the beneficiaries of that trained intelligence. In the very nature of things we cannot all have the training, but we can all have the benefits. —Calvin Coolidge.

SERVICE AND THE PHARMACOPOEIA

On page 151 of the March issue of CLINICAL MEDICINE we called attention to the changes which were made in the tenth revision of the United States Pharmacopoeia, and at the end of the editorial made the statement that we were having a list of all changes prepared, which we would be glad to send to those who were interested. The demand for these lists has not been so heavy as we expected it would be, and we therefore have quite a number still on hand.

It may be that many physicians overlook the importance of being posted concerning the contents of the pharmacopoeia. Every man who does any prescribing at all—and that means practically all of us—should be thoroughly familiar with the exact composition of the various medicaments his patient is getting, and the only place to find this information, in authoritative form, is in the pharmacopoeia. We had ten years

to become familiar with the contents of the old one, but there is no heaven-sent intuition which will enable us to learn what changes were made in the "U. S. P. X." without looking the matter up.

If you have the ninth revision, you can take this list of changes which we are offering to send you and note them in the old volume, thus bringing it up to date and saving the price of a new copy.

We want to be as serviceable as possible to the greatest number of people, so we are not restricting this offer to physicians. Any druggist or veterinarian who sees this will receive a copy of the list if he will write for it. Any doctor will be doing a service to his pharmacist if he sends for a list and makes him a present of it. It is a mighty useful thing to have.

We shall not bring this matter to your attention again, so if you want to have the benefit of a service which we are rendering to our readers, by the expenditure of a good bit of time and cash, better write now while you think of it.

Remember, always, that CLINICAL MEDICINE is not merely "another medical journal," but is a *service* to its readers, and let us help you, in any way we can, in finding the solutions of your daily problems.

Art is doing what you do *perfectly*.—Annie Besant.

EPHEDRINE

The drug Ma Huang has been used as a medicine in China for more than 5,000 years to improve the circulation, cause sweating, stop cough and reduce fever.

This ancient, oriental medicament is, botanically, *ephedra vulgaris*, a rather small leafless plant, looking something like the "mare's tail" which grows along railroad tracks and in other barren waste places. It contains two alkaloids, ephedrine and pseudo-ephedrine, which were isolated a few years ago by Nagai and Merck, respectively. Most of the clinical pharmacological research work has been done in China by Chen and Reed.

Ephedrine and its salts are crystalline bodies, readily soluble in water. The hydrochloride dissolves readily and the sulphate with difficulty in alcohol. Its chemical structure is similar to that of epinephrin, but its molecule is more stable, its action is somewhat slower and the therapeutic dose is much larger. It has a moderately bitter taste. Some specimens of this drug seem to be very weak or inert, so it behooves one to be sure of a reliable source of supply.

Physiologic Action. The general systemic effects of ephedrine are upon the circulation, the unstriped muscular structures and the secretions, and are those of *sympathetic stimulation*. Qualitatively they much resemble those of the epinephrin but are more prolonged.

Circulatory stimulation is produced by its action upon the cardiac accelerator ganglia and the nerve endings in the heart. The *blood pressure* and *pulse rate* are *increased*, and this increase always persists for more than 15 minutes and frequently for an indefinite period. The rise in blood pressure is caused by an increase in cardiac contraction, and *not* by constricting the arterioles, which has an important bearing upon the after-effects resulting from its therapeutic use. It breaks the vicious circle in *shock* by forcing stagnant blood into the effective circulation, thus bringing more nutrition to the heart, the medulla and other essential organs.

Acting upon the *smooth muscles* it relaxes the intestines and the bronchial muscles, inhibits peristalsis, increases the muscular tone of the uterus and dilates the pupils. All these effects are of peripheral origin, as they occur in decerebrated animals.

Ephedrine increases the gastric *secretions*, but not those of the liver, pancreas or intestines.

The *local effects* are also somewhat similar to those of epinephrin, but differ in several important particulars.

Dr. Alice H. Cook, of Pekin, found that a 10-percent solution of ephedrine sulphate produced a *shrinkage of the nasal mucous membranes* more rapid and complete than that resulting from the application of a 4-percent solution of cocaine. Fetterolf and Sponsler have amply confirmed this finding. They applied a 5-percent solution to a spot 1 *cm. in diameter* at the anterior end of a number of markedly swollen turbinates and found that, in less than a minute, the *entire turbinate* began to shrink (showing free absorption). In an average time of 2⅓ minutes the mucous membranes were so completely shrunken that the outlines of the underlying turbinate bones could be distinctly seen. This condition persisted, on an average, for 2 hours and 35 minutes, and the membranes returned to their former swollen condition only after the lapse of 3 hours and 17 minutes.

At no time did the membranes present the

dead-white pallor which follows the local application of epinephrin, nor was there any of the subsequent local reaction, with severe irritation and sneezing, either on the same or subsequent day, which frequently follows the use of that drug.

Poisoning. The minimum lethal dose of ephedrine, for rabbits, is 600 mgm. per kilo of body-weight, if given by mouth; 350 mgm. per kilo, by hypodermic injection; and 60 to 70 mgm. per kilo if the intravenous route is employed. In terms of a man weighing 150 pounds, this would mean 42 Grams (630 grains), by mouth; 24.5 Grams, hypodermically; and 4.5 Grams (67 grains), intravenously.

Following the intravenous injection of a toxic dose, death occurred almost immediately, in clonic convulsions. If the drug was given in any other way the convulsions did not come on for 1 to 2½ hours. Death appears to be due to peripheral action on the heart, but the mechanism by which it occurs has not been fully investigated. All animals which did not die recovered completely. We have found no record of ephedrine poisoning in a human being.

The sensations following a therapeutic dose are the same as those produced by the hypodermic injection of epinephrin—internal trembling, tremor of the hands, etc.—but occur less regularly and persist somewhat longer.

Therapeutic Uses. One of the most interesting points in connection with ephedrine is that it seems to be almost equally effective whether administered intravenously, hypodermically or by mouth.

Its use is indicated in *shock, hypotension and circulatory collapse,* where it had best be given hypodermically, though it will act fairly promptly when given by mouth, if the patient is able to swallow. The usual dose, for injection, is about 2 grains, for a man weighing 150 pounds. The oral dose is about the same or slightly larger.

In slight hemorrhages ephedrine is sufficient to control the symptoms; and in profuse bleeding the injection of this drug, in the same dosage as for shock, is a good emergency procedure, while transfusion or other important measures are being prepared.

In *hay fever* and *asthma* the daily administration, by mouth, of from 1 to 5 grains of ephedrine, in divided doses, as required, is said to control the symptoms completely, or to a large extent. The relief persists for from 6 to 8 hours after each dose. In mild asthmatic paroxysms, ½ grain, by mouth, usually gives some relief within 2 to 5 minutes and produces complete bronchial relaxation in 15 to 20 minutes. In more severe cases this dose should be repeated every 10 to 15 minutes until results are obtained or 5 or 6 grains have been given.

In *Addison's disease* the results with ephedrine are *less good* than those following the use of epinephrin.

Locally, ephedrine can be used for all the purposes for which epinephrin has been recommended. In nose and throat surgery the shrinkage of the membranes is as prompt as, and more complete and prolonged than, that following the application of the latter drug. The after-effects following its use are practically nil.

Ephedrine can be used alone, or combined with homatropine, as a *local mydriatic;* but, for this purpose, pseudo-ephedrine is said to be more efficient, though it is less effective for other purposes.

Here appears to be a drug for which the medical profession has long been wishing. The field of usefulness of epinephrin, in the treatment of asthma and hay fever, is greatly restricted by the fact that, in the former condition, it is effective only when given hypodermically, and in the latter, the immediate good results are overbalanced by the subsequent reactions. In shock and collapse its effects are prompt and positive, but transient.

Ephedrine may safely be given to patients with asthma and hay fever for use at home, as occasion requires; and when injected by the physician, as an emergency remedy, or used by the head surgeon in operative work, the results are practically as rapid and certain as those of epinephrin—and much more durable.

A man must insult himself before others will.—*Chinese Proverb.*

RAYNAUD'S DISEASE

Raynaud's disease—so named from the French physician, Maurice Raynaud, who died in 1881—is a very painful and not very uncommon affection, due, presumably, to some constitutional abnormality of the sympathetic vasomoter mechanism.

Heredity plays a definite part among the predisposing factors, and so, also, does syphilis, in some cases but not in all. It is commonest in early adult life and in women, but no age is wholly exempt.

The chief exciting cause is cold, as the disease never occurs in warm climates; but gastrointestinal disturbances may play some part. Peripheral neuritis and various neuroses are frequently associated with Raynaud's syndrome, but not always.

The symptoms, which come on after exposure to moderate degrees of cold, and which resemble those following exposure of normal individuals to much lower temperatures, are produced by spasm of the arterial and probably, also, the venous capillaries.

The extremities (fingers and toes) are, by far, the most frequent points of attack, and both sides are almost always involved. The pathological changes rarely extend above the wrists or ankles.

There are four stages to an attack: local syncope, local asphyxia, active hyperemia and gangrene.

In the first stage the spasm of the arterioles shuts off the peripheral circulation and the fingers or toes become white, cold, numb and bloodless. This lasts from a few minutes to several hours.

With the progress to the second stage the affected parts become blue or almost black, but remain extremely cold. The numbness is replaced by excessive pain and tenderness.

The third stage represents the beginning of a return to normal conditions. The previously contracted vessels dilate widely and the parts become red, swollen, hot, painful and throbbing. This acute hyperemia subsides gradually, after a longer or shorter time, and the parts return, in favorable cases, to normal.

The fourth stage occurs only in cases where the other three have been unusually severe or prolonged. If the circulation is completely shut off for any considerable period of time local death of the tissues, or gangrene, of course, occurs. In such cases the tip of a finger or toe becomes cold, dry and very painful and finally separates and sloughs off. The loss of tissue is very small and is usually symmetrical.

Mild attacks of this disease are known as *chilblains* and may occur repeatedly without serious consequences. Moderate attacks usually result in some loss of tissue by gangrene. Severe attacks are rare, and may result in the loss of both hands and both feet.

The diagnosis should not be difficult, as such symptoms, appearing in a young and otherwise healthy adult are simulated by no other condition except *erythromelalgia*, which, in many respects, resembles Raynaud's disease. The differences are that erythromelalgia is commoner in males, is usually unilateral, is excited by heat and fatigue, and the affected part is usually red and hot from the start.

As complications, *paroxysmal hemoglobinuria* is not uncommon; while transient aphasia, hemiplegia or amblyopia occur at times, due to spasm of the renal, cerebral or retinal vessels. Epileptoid convulsions are occasionally seen.

The *treatment* is readily indicated by the condition and consists in the administration of drugs which relax vascular spasm, notably nitroglycerin, atropine and veratrine.

Nitroglycerin acts promptly but its effects are transient. It may be given hypodermically, but should be immediately followed by an injection of a moderately large dose of atropine. The effect may be maintained by repeated small doses of atropine or veratrine by mouth, as required by the particular case.

As prophylactics, life in a warm climate is most effectual but is not available to all patients. Warm clothes, a diet rich in fats and avoidance of chilling of the extremities are all helpful. Careful attention to digestion and elimination probably exercise a salutary effect.

At the time of the attack it is well, in addition to giving the remedies suggested, to wrap the affected parts in a heavy layer of cotton, to protect them from cold and injury, and to give morphine, if needed for the pain, which is, at times, of extreme severity.

Wassermann tests will determine whether syphilis is a factor, and if such is the case active treatment with the arsphenamines and bismuth or mercury should be instituted.

In very severe or obstinate cases of Raynaud's disease or erythromelalgia, Dr. A. W. Adson, of Rochester, Minn., recommends the removal of the 2d, 3d, and 4th lumbar sympathetic ganglia from both sides.

Buildings are measured by their shadows, and great men by their calumniators.—*Chinese Proverb.*

TAFFY OR EPITAPHY

Theoretically, the strong and thoroughly well-balanced man should be able to go through life without ever feeling a need for encouragement and kind words from his fellows. Practically, few of us are so strong as that. A friendly handclasp and a rea-

sonable amount of commendation hearten us immensely and make the days shorter and brighter and the way smoother.

This line of thought was suggested to us by attending a memorial dinner recently. This testimonial of appreciation was in honor, not of a man who has joined the "great majority," but of one who is still laboring powerfully among us. The North Shore Branch of the Chicago Medical Society gave it in honor of Dr. Charles J. Whalen, for many years editor of the *Illinois Medical Journal*—and still carrying on the good work.

On that occasion his associates rose up and told of his achievements as a physician, a medical organizer, a citizen and a man, and their words were obviously from the heart. What an experience to sit, in the flesh, and hear such things said of one! How much easier it ought to make the struggles which we all have to face in everyday life!

Why do we not say more kind and helpful things, to and about our friends, *while they are still alive?* The old phrase, *de mortui nil nisi bonum*, is fine, so far as it goes, but why should we say nothing but good of the dead and still be ready to stick a knife in the back of our living neighbor?

Let us have a new motto, and paste it in our hats so that we will see it often: *"Say nothing but good of* ANYBODY—*and say it to his face."*

Some people have wondered why we publish portraits and biographies of living celebrities. In heaven's name, isn't that the very time to say pleasant things about them! It may do *you* good (we believe it does) to read about the men in our profession who have succeeded abundantly and passed on; but it doesn't add anything to *their* joy and comfort.

We don't have to get up elaborate banquets nor give costly gifts in order to prove to our companions that we appreciate them. A hand on the shoulder and a kind—even a *flattering* word costs us nothing and gives them something which is priceless.

Remember the old saying about sowing and reaping? It isn't just words! It is a law of nature! Try sowing a good healthy sack of pleasant and encouraging words for a few months and see if you won't reap a crop that will be worth your while.

It is a beautiful and touching tribute when we carve glowing words of love and praise upon the cold marble which stands guard over the mortal remains of those who have left the body behind, but let us not save our love and praise for the epitaph. Let us dispense a larger proportion of "taffy" as we go through life, and not save it all for "epitaphy."

Better not do kindnesses at all than do them in the hope of recompense.—*Chinese Proverb.*

SUNLIGHT AND ULTRAVIOLET RAYS

An editorial in the *Medical Journal and Record* for February 17, 1926, strongly suggests that the beneficial effects of sunlight and of ultraviolet rays upon the human organism are vastly overrated and have been more or less exploited of late, consciously or unconsciously.

It is true, of course, that people who are making something to sell have a strong interest in convincing other people that their product is essential to life, health and happiness, and some of the claims put forward by the manufacturers of apparatus for generating ultraviolet rays may well be a bit overenthusiastic.

There have been and are, however, a large number of investigators at work upon this subject who have no personal interest whatever in the commercial aspect of the question, and their reports may reasonably be accepted without serious discount.

The author of the editorial mentioned argues that, if the effects of sunshine and ultraviolet rays are as beneficial as they are claimed to be, it should follow that people who are most exposed to the sun should be the most energetic and healthy; while it is notorious that tropical races are far inferior in these respects to the inhabitants of countries where sunshine is much less, both in quantity and quality.

This line of reasoning appears to us to be unsound in several particulars.

In the first place the inhabitants of the tropics are exposed, not only to excessive light, but also to excessive heat, whose debilitating effects are well known.

There is also a sociological factor which is not without importance. In tropical regions the conditions of life are much easier than they are in the North. Houses which are adequate to the conditions can be built for a song. Clothing is worn for purely esthetic reasons and may be exceedingly scanty and inexpensive. There are no coal bills to pay and the heat of the air diminishes the necessity for food. The climate and the fertility of the soil render it possible to raise profitable crops with a minimum of labor. May not this lack of

economic pressure have something to do with the socalled indolence of the dweller in the tropics? How many of us would labor strenuously if it were not necessary to do so in order that we and our families might be fed, clothed, warmed and sheltered?

Another factor is also to be considered. A little arsenic is a very useful and valuable thing in the human economy, under many conditions; but that does not mean that the more arsenic a man takes the healthier he will be. The proponents of heliotherapy—natural and artificial—from Rollier and Finsen to this day have emphasized the advisability of administering this remedy in carefully regulated dosage.

Again, there are many who speak with a good deal of authority to the effect that, in some respects and conditions, ultraviolet radiations are preferable to direct sunshine, for the reason that the latter contains a large percentage of the longer rays, covering the areas of the visible spectrum and the infrared vibrations, the effects of which are relaxing or even debilitating if absorbed by the body in excess.

The fact that men and animals have developed skin pigmentation, hair, fur and feathers for the purpose of protecting them from the effects of light does not seem, to us, a valid argument against the necessity of direct solar radiations for health and efficiency, but rather an illustration of the marvelous efficiency of Nature in protecting us from an *excess* of her beneficent gifts.

We may be overenthusiastic regarding the results to be obtained by exposing the body to the rays of the sun or the mercury-vapor or carbon arc; and there is, no doubt, a great deal to be learned about the powers, mechanism and limitations of this recently-developed—though age-old—therapeutic resource, but those who desire to witness the physical effects of withdrawal of these rays can readily do so by keeping a plant or an animal in the dark for a few weeks or months. As to the psychic effects, we have but to compare our own feelings and reactions to life during a protracted period of gloomy weather with those we experience when the sun is giving us the benefit of its energizing radiations without obstruction.

Honor is not physical or accidental. It is a state of mind resulting from a voluntary and conscious adherence to certain rules of life and conduct. As such it is entirely your own possession and creation, a thing of which no one can rob you but yourself; it is at no man's mercy but your own.—

LIFE INSURANCE EXAMINATIONS

Many physicians seem to be seriously exercised over the fact that certain life insurance companies are issuing policies without a medical examination of the applicants.

All persons who are policy holders in such companies have reason to be concerned, for every time a policy is issued without an adequate physical examination the value of every other policy previously or subsequently issued by that company becomes less, because "poor risks" are being admitted and will soon begin to cut down the average life expectancy of all the policy holders.

It might be a good idea if all who are interested in this way entered a written protest to the company against this practice.

Of course, physicians have another interest in this matter, because fees for insurance examinations contribute considerable sums to the incomes of many of them, and, if this source of revenue is cut off, it will work real hardship to some.

There has been another outcry, not so long ago, when certain companies reduced the amount of the fee paid for certain examinations, but there was not sufficient solidarity in the profession to make our protests good. Many physicians refused to examine at the lower price; but there seemed always to be someone, in every community, who would accept the new fees for the sake of getting more small-calibre business.

There is another angle to this discussion which will bear some serious thought. We were talking, the other day, to the Medical Director of one of our big insurance companies, and this subject came up. He said, "They talk about a physical examination being worth at least five dollars. A *good* one would be worth more than that. But what are the companies getting for the five dollars, or the three or two dollar fees? Just nothing, in many cases! The doctor has the applicant take off his coat, and sometimes he goes through the farce of percussing and auscultating the chest, *through the vest and shirt.* Often he just says, 'Your lungs and heart are all right, aren't they?' and writes 'normal' on the blank.

"Many of them do the 'sink test' on the urine, and those who make a bluff at really examining it do so in a slipshod indifferent manner which tells us nothing.

"The height, weight and other measurements are rarely actually taken, but the ap-

plicant's statements in the matter are entered as a part of the record. The same is true of the temperature and even the blood pressure, which is guessed at by feeling the pulse.

"The taking of the personal and family history is even more of a farce. The doctor says, 'You never had any of those, did you?' pointing to a long list of diseases, and enters 'no' on every line of the blank.

"A proper life insurance examination cannot be made in less than 30 to 45 minutes, even by a man trained in the work; and when you see the average practitioner grinding them out in 15 minutes, most of which time is spent filling out the blank, you can figure what the examination is worth to us. For that sort of work we cannot afford to pay five dollars—or even two. It is just as sound business, and more honest, to issue the policy with no examination at all."

Now, we have seen enough of this sort of work to realize that there is, unfortunately, a considerable element of truth in this man's rather drastic statements, and we wish there were some word we could say to every member of our glorious profession which would move him to cease doing sloppy work, anywhere or at any time, for it is this sort of work which does more to bring us into disrepute and to give aid and comfort to the quacks and irregulars than any other one thing—or several of them put together.

In this insurance business, if we would all solemnly agree to give the applicant a *full five dollars' worth of examination* on every policy, and then *insist* on receiving that amount, the insurance companies would meet us more than half way. They know the value of an adequate examination better than anyone, and if they could be sure they were getting what they pay for they would be overjoyed to pay the price, for they are good business men and keen judges of values.

Let's all think this matter over, under our hats, and then talk it over in our society meetings and see if we cannot solve this problem *right*, for every single community in the country. If we can, it will be a better country and we will be better doctors and citizens.

THE longer on this earth we live
And weigh the various qualities of men,
The more we feel the high, stern featured beauty
Of plain devotedness to duty,
Steadfast and still, nor paid with mortal praise,
But finding ample recompense
For life's ungarlanded expense
In work done squarely and unwasted days.

—*James Russell Lowell.*

Leading Articles

Medicine and the Progress of Civilization*

By WELLER VAN HOOK, M.D., Chicago
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MEDICINE is one of the widest and most varied studies of which we know, for, in its fullest meaning, it is the study of man.

In order properly to understand the human body we must be familiar, not only with anatomy and physiology, but with biology, anthropology, pathology and various other sciences. In order to understand the mind and its profound effects upon the body, in health and disease, we must have a considerable knowledge of normal and pathological psychology, sociology, and all the multitude of life interests which may affect the individual, favorably or unfavorably.

Nor is the science of medicine for the benefit of those alone who are ill. As we learn more and more of the laws of hygiene and how to control all deleterious influences, sickness must and will disappear. Vast changes impend for the world, and medical men, also, must change. But how?

When we speak of civilization, many persons think of it as a single and separate thing which is the possession solely of this generation, this century or this nation. Such an idea is wholly erroneous. There were civilizations of high character long before this nation or even our Anglo-Saxon race came into being. The people of Assyria, Babylonia and Egypt were highly civilized thousands of years before the Christian Era. There is even a rather well founded tradition of an even more highly developed civilization long before that, on the lost continent of Atlantis.

The heritage of those ancient races now remains in the Orient. The Eastern civilization is very ancient and very highly developed. That it differs, fundamentally, from the form and substance of Western development is not at all in its disfavor. Western civilization is one thing; Eastern civilization is quite another thing; both are fine and worthy and are contributing to world progress. More and completer contacts between the East and the West will vastly benefit both.

Our own immediate civilization dates from the time of Petrarch and the Revival of Learning—about 1300 A.D. It was at this time that a few wise and bold men gave up the old, orthodox, narrow views which had, theretofore, stifled initiative and hampered progress and began to investigate for themselves.

That was 600 years ago. Look back to that time and then add 600 years to the stage of progress we have now reached, and the mind is staggered by the possibilities. The most active imagination can scarcely conceive anything which is beyond the bounds of probability when we consider the tremendous forces and the vivid life which are now at work.

Medicine and general science are mutually dependent. The physician cannot go forward without the help of general science—consider the microscope, Mendel's studies in heredity, the developments in the fields of electricity and optics and many other matters; and general science cannot proceed with the enormously important studies of man's body without the assistance of medical men.

The science of preventive medicine is part of the foundation of the present civilization. A hundred years ago there were many parts of the globe where white men could not live nor even travel without the greatest hazard, because conditions were such that they died of widespread diseases. Today the whole world is open to us for the reason that at Panama, Suez, and along all lines of travel quarantine regulations and examinations are enforced, in order that the traveler may proceed with safety to himself and to the countries which he later visits.

In the Orient, even in India, the plague, smallpox and cholera still kill hundreds of thousands of people every year, although the medical men know how these can be controlled. But the authority of scientific medicine is not sufficiently recognized there.

*Synopsis (made by the Editor) of a lecture before the Medical Round Table, of Chicago, May 11, 1926.

Even in America we medical men should speak with a louder and more commanding voice.

India is not the only place where the laws of hygiene are not enforced. That we do some of these things better than they do is small credit to us, because knowledge of such matters is much more widely disseminated here than there. The intelligent people in India know that sanitary policing should be more effectively carried out. We, in this country, fall far short of doing all we know how to do to maintain individual and community health.

But let us turn from the field of broad generalities, where the progress we have made seems so impressive, and consider a few of the special lines of study where lack of knowledge proves that civilization is still in its infancy.

How much progress has been made, in the last generation or two, in the study of tissue regeneration and wound healing? Little or none. August Bier, of Berlin, is hopeful of increasing the field of regeneration of tissues, but we do not yet know how it can be done! If we cut off the leg of an embryo frog it will grow again, because the tissues are still in an embryonic, semiliquid condition. Can we not find ways to cause human tissues more freely to return to their embryonic condition so that regeneration of diseased or amputated structures may take place? Here may come some of the epoch-making discoveries of the future. The field of *tissue cultures* is an enormous one and perhaps progress may come from that direction.

In the field of eugenics we have made practically no progress at all. These matters are now largely in the hands of scientifically untrained women who do not see the true problem at all, but are governed by their emotions rather than by reason. Birth control is beginning to come in for some scientific study in England, Holland and a few other countries, but our attitude toward the question is still Victorian—not to say medieval. These studies and their application should be in the hands of medical men who will be able to appreciate all the factors involved and to supervise the work in an intelligent and scientific manner. The mating of men and women should not be wholly sentimental and haphazard.

Many traits which have long been attributed to heredity are now being found to be the result of environment, and the compulsory sterilization of criminals, which has, for some years, been advocated as a definite step toward limiting the procreation of the unfit is now believed, by many thoughtful men, to be founded upon erroneous premises. Here is another wide and fertile field for study by medical men.

The growth and development of children is one of the most vital problems which we face today, but little has been done toward its solution.

A friend of mine took the smallest and least promising pig from a litter and fed it carefully and intelligently, and it grew to be a huge hog. If you take a suckling draft colt and feed it a goodly measure of oats it will grow into a big horse. If you feed a beef-calf the milk of two cows you will produce a show beast for the expositions. Can children, also, be *fed for growth?* Can we not figure out methods of special feeding to produce special results for human beings?

The solution will not come by stuffing or by starvation, but by intelligent, intensive feeding; and when some one has worked out the underlying principles on a dozen or a score of children they can be applied to thousands and millions.

Much can be done in other ways for individual puericulture and race culture. Some enthusiastic experimenters took some Morgan horses from New England, where the breed was but slowly advancing, to Colorado, where, under ideal environmental conditions, a strain of wonderful animals is being developed. It should be possible, *after adequate study*, to adapt methods to conditions of human environment so as to produce surprising results.

There is a pressing need for new racial types to meet the new conditions of life in the twentieth century. Hrdlicka sees a new type developing *now*, in the United States, Canada and Australia. Is anyone *superintending* this development? Not at all; but it *should* be superintended, and by intelligent and trained medical men.

The study of death and of the means for warding it off is an almost wholly unexplored territory. Only a few years ago the diabetic and the man with cardiac impairment were condemned to prompt and certain death. Today, with insulin and a sufficient knowledge of body chemistry to prescribe diets intelligently, the diabetic can live and work, with tolerable comfort and efficiency, for years. The cardiopath, the man with damaged kidneys, or even those whose general physique is seriously below par can carry on for a long time, holding death at

bay and adding much to the sum of human happiness and progress.

If that valued surgeon and teacher, John B. Murphy, had cared for himself as well as he knew how to do it for his patients he might have been alive today, and the profession might have benefited greatly through his added years.

If physicians will study deeply into this question of the enjoyment of life under the limitations that should be adapted to individual conditions, the technic of prolonging life can be *taught* to men, with enormous profit to the world.

We are hearing much, today, of the controversy between the *materialists* and the *vitalists*—those who would study the physical body alone, and those who take cognizance of the soul which inhabits the body.

Crile is one of the foremost proponents of the mechanistic explanation of all the phenomena of life; of the doctrine that the brain secretes thought as the liver secretes bile.

On the other hand, Wilhelm Roux is now very active in his investigations to prove the large service which vitalism is able to offer to the study of biology; and that respected philosopher and biological investigator, Hans Driesch, is corroborating many of his statements. The testimony of such men as Sir Oliver Lodge and other eminent members of the Society for Psychic Research cannot be dismissed with a snap of the fingers.

There veritably are two sides to this question. Crile does not go uncontradicted. Science has a territory to investigate in the realms of paraphysics and parapsychology (sometimes known as occultism) which must be investigated by us if we are to make adequate progress in the future.

The phenomena of telepathy, clairvoyance, psychometry and the like cannot be settled today, but they must and will be studied. Even now those who are interested in psychic research have carried their *strictly scientific* investigations to the point where they have demonstrated that forces are in operation all about us of whose very nature we now know nothing. These forces should be studied by medical men, *in their professional capacity*, in order that the knowledge of them may, at the earliest possible moment, be utilized for the amelioration of human life.

The chief purpose of this discussion is to show that scientific medicine has a fundamental relation to the progress of civilization. Medicine has limited its own scope unduly. It must now *expand* to embrace all the humanistic and scientific fields which are not covered otherwise. Laboratories should be established for the study of eugenics, child culture, psychic phenomena and other vital matters which now receive insufficient attention.

Medical men should go more into public life, to correct conditions which are now seriously wrong, and which they alone possess the knowledge to make right. It is not alone in India and in Mexico that such work is needed; every nation is suffering from the lack of this service.

And because, today, the destinies of most of the nations are in the hands of politicians, it is necessary that physicians should enter the field of politics to such an extent as may be necessary to press home, throughout the world, the necessity for public welfare and organized and intelligent human progress in the arts and sciences which will give character to the civilization of today and of the future.

THE scheme of redemption the world most needs is the break-up of its mental habits, and the turning of its mental and spiritual processes into those free and open channels which experimental science, critical analysis of natural forces, and a free philosophy of the natural universe has taught the scientist how to teach to men.

—Albert E. Wiggam.

The Prolonged Intravenous Glucose Infusion

By EMERY M. FROMMER, M.D., St. Joseph, Mo.

THE administration of large amounts of liquids directly into the blood stream, with sufficient safeguards, is the sovereign remedy in cases of dehydration, toxic absorption, postoperative shock and generalized septic infection. None of the methods of cardiovascular stimulation at present in use can be compared with prolonged intravenous instillations.

The usually given hypodermoclysis and rectal drip are, in a large number of cases, ineffective. Rectal drips, even when retained, are very often not absorbed, as in cases of advanced, diffuse peritonitis or paralytic obstruction of the bowels, when the portal circulation is stagnant. In cases of severe postration or shock such rectal instillations are frequently not retained or tolerated. They are also strictly contraindicated after extensive gastrointestinal operations, causing undesirable peristalsis or endangering the sutures.

Hypodermoclysis is very often insufficient as a stimulant when it is most needed; i. e., the subcutaneous absorption is either delayed or suspended from capillary stasis, as in shock and similar conditions.

The peroral administration of large quantities of fluids to restore the vascular balance by means of the gastric or duodenal drip is futile in many cases, as in diffuse peritonitis, acute gastric dilatation, paralytic intestinal obstruction or mechanical ileus (carcinoma or benign stricture).

Whole blood is undoubtedly the most powerful restorative, but it is very often unavailable in emergencies; its transfusion requires a more or less complicated apparatus and well-trained assistance; and its brilliant immediate effect is not always sustained. Experience has taught us that, for the majority of emergencies, it is not essential that blood should be transfused when other means of supplying the circulation with fluids are available.

Fluids Intravenously

In the particularly serious cases of septic abdominal conditions, in which the absorbent function as well as the motility of the gastrointestinal tract is inhibited (as in cases of intestinal obstruction, diffuse peritonitis, intraabdominal perforation, common duct obstruction with hepatic insufficiency); in cases in which dehydration and exhaustion develop from continuous vomiting, with starvation resulting in toxemia; in all instances of pyonephrosis and nonseptic renal diseases with threatened anuria; and in cases of sudden loss of blood, when the patients are profoundly shocked, with poor capillary circulation and dehydrated tissues, the immediate effect of massive intravenous infusions is brilliant. But this effect is very often transitory only, even when the viscosity of the injected fluid is increased by means of calcium chloride, gum or sodium citrate. The infused solution soon accumulates in the splanchnic area, remaining ineffective for the circulation.

The incomparable advantage of the prolonged intravenous instillation of fluid lies in the continuous stimulation and feeding of the myocardium and the vital centers, provided no destructive changes have already occurred in the vital organs.

The isotonic glucose solution proved to be the best material for prolonged intravenous infusions and should be preferred to the usual saline solutions ("physiologic" salt solution, Ringer's and Locke's solutions) in all cases in which a replacement of the lost or displaced blood and stimulation of the myocardium is needed. Thus glucose is especially valuable to patients suffering from renal or cardiopulmonary diseases in whom salt retention is very dangerous (Düttmann, Matas). Saline infusions are positively contraindicated in all toxic cases in which degeneration of the renal epithelium with salt retention occur, and in all conditions in which pulmonary congestion from impaired circulation predispose to hypostatic edema (Matas).

"Physiologic" salt solution is not physiologic for warm-blooded animals. Animal experiments show that tissue lesions are produced in the myocardium and the kidney parenchyma by saline infusions. Thiess has pointed out that the average healthy adult needs 17 Grams of salt in 24 hours, but that he receives 27 Grams when given 3000 cc. of a 0.9-percent salt solution. This salt is partly eliminated by the kidneys and sweat glands, and partly retained in the tissues, where it attracts fluid and causes edema. Continuous administration of salt is therefore disadvantageous in starving patients, not only because it produces salt retention and degenerative changes in the vital organs, but also because it does not

relieve the acidosis always present in starvation.

Advantages of Glucose Solution

Glucose is much superior to salt solutions for its nutritive, stimulating, blood-replacing, diluent and diuretic properties and as a neutralizer of the acidosis present in prostrated patients (Kuhn). Düttman's and other investigators' experiments show that a glucose solution, 4.15 percent, is as isotonic to the tissues and blood as is a 0.9-percent salt solution. If a 5-percent solution of glucose is equal to 50 Grams to the litre, then 4,000 cc. of the intravenously infused solution will amount to 200 Grams of glucose in the 24 hours. In calories (1 Gram of glucose gives 3.75 calories), 1000 cc. of 5-percent solution of glucose would equal 187.5 calories; and if 4000 cc. are given in 24 hours, 750 calories will be consumed by the patient in a day.

Isotonic solutions of glucose are utilized without any residue and do not cause glycosuria. The sugar disappears quickly from the blood and increases the metabolic rate, as indicated by the higher excretion of phosphates and urates in the urine. Temporary glycosuria can be observed, however, when highly concentrated (20 to 30 percent) glucose solutions are infused for diuretic purposes; but such high concentrations are used only when urinary suppression is threatened.

The Technic of Infusion

In the last three years of experimentation, I have used different types of infusion apparatus. I used the principle advised by Perfield and Teplitsky and the apparatus described by Matas. The former outfit contains a heating chamber to maintain a constant temperature of the solution entering the blood stream. The outfit is connected with a manometer for reading the venous pressure at short intervals and a needle valve regulates the rate of flow.

The apparatus described by Matas is composed of a simple glass jar, rubber tubing, which is interrupted by a tapped drip bulb, two clamps and an electric pad designed by Duchesne to maintain the necessary temperature.

Perfield's and Teplitsky's outfit, with the venous pressure gauge, is an ingenious physiologic laboratory apparatus and valuable for exact clinical observation. In emergencies, however, this outfit can hardly be used, nor in the patient's home, for it consists of three units, which have to be observed carefully during the whole procedure. Also, accurate methods of heat regulation are not as essential as we thought them to be. Physiologic experiments lead to the conclusion that an infusion solution may vary somewhat in temperature without producing chills or any other untoward reactions, and without interfering with the assimilation and utilization of the infused glucose.

Concerning the manometric indicator of the venous pressure it can be stated that clinicians rarely need a sphygmomanometer to tell when the arteries are emptying and the veins filling, although experience is not a measurable quality. The emphasized necessity of a venous pressure gauge in the infusion outfit would completely withhold the profession from attempting the administration of intravenous infusions in emergencies, when such a manometer is not available.

The apparatus described by Matas is of the simplest sort and very satisfactory for hospital use. Its only disadvantage is the high cost of the specially designed electric pad; also, such an electric pad for sustaining a temperature cannot be used in a patient's home where no electric light is installed or where the sickroom switch is out of reach.

Employing a Thermos Bottle

To eliminate these difficulties and to make intravenous infusions easily possible outside of the hospitals (in obstetrical cases, untransportable patients, etc.) I use the simple thermos principle, which allows us to maintain a fairly constant temperature over a period of several hours in the easiest way.

The outfit consists of a regular thermos bottle of any size desired. This bottle can be sterilized by removing it from its metal case and boiling it in water, like any ordinary glass jar. After sterilization the bottle is placed again in the metal case, screwed tightly into it and closed with a sterile cork.

The essential part of the outfit is a two-hole rubber stopper, containing a straight glass tube in one hole and a U-shaped tube in the other (Fig. 1). This latter glass tube gives entrance to the air necessary for expulsion of the infusion solution through the straight glass tube, which is connected with a long rubber tube. This rubber tubing is interrupted by a small glass bulb (C, Fig. 2) (for a single massive

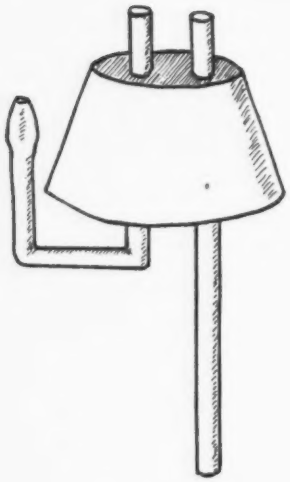

Fig. 1

infusion), or by Murphy "drip bulb" (for continuous infusion), indicating the fluid level and the drops, respectively, as the thermos bottle, being imbedded in a metal case, does not permit the reading of the fluid level. The rubber stopper, tubing and glass tubes are sterilized in boiling water.

After filling the bottle with the glucose solution its mouth is closed tightly with the rubber stopper containing the glass tubes, and the rubber tube is armed with the cannula. The whole outfit is now tilted and hung up at any height by a metal ring (A) soldered to the bottom of the thermos bottle case (Fig. 2). The small mouth of the curved glass tube (B) is covered with cotton to lessen the possibility of air contamination.

Immediately an air bubble enters into the bottle through the curved glass tubing, accompanied by a click, which is audible with each bubble entering into the bottle. This has proved to be a very useful sign, indicating that the flow is undisturbed, for, before inserting the needle into the vein, one must be certain that a continuous flow is secured.

To start the flow some vacuum must be produced in the rubber tubing by compressing it once or twice with the fingers. The flow is then continuous and can be regulated by the stopcock (D) and the size of the needle. The needle can now be inserted into the vein. It is always advisable to test whether the needle is in the lumen of the vein, which can be easily accomplished by producing a negative pressure in the rubber tubing (compressing the tubing with the fingers from below upward; blood enters instantly into the glass connecting tube (E).

The loss of temperature through the entering air bubbles is negligible, for after three hours the solution dripping from the cannula is only one-half to one degree cooler than the temperature of the original solution.

Reactions and Embolism

Reactionary chills, as is well known, may occur in a large number of patients and are often observed even after whole blood transfusion. Whether the variation of the hydrogen ion concentration plays any part in producing these chills is doubtful. We know that a higher pH in the blood is associated with tetany (alkalosis); while a lower pH is accompanied by coma (acidosis).

Van Slyke has shown that whole human blood is kept constantly at pH 7.4, but experiments show that variations between 6.0

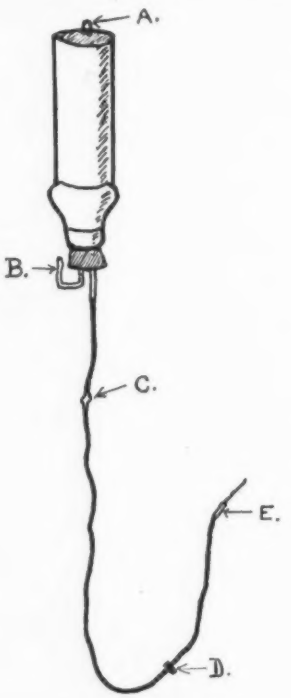

Fig. 2.

and 9.2 do not cause any untoward symptoms. Glucose solutions (less than 10 percent), when freshly prepared and used within 24 hours, show a pH of 5.9 to 6.4; i. e., these solutions are consistently acid as compared with the blood. In spite of this, considerable amounts of these solutions have been infused without any reactionary chill and fever. These reactions seem to be a matter of individual susceptibility. But whatever may be the cause, this chill and high temperature following intravenous infusions is a monoparoxysmal phenomenon, not aggravating the prognosis, and should cause no undue alarm.

In connection with the technic, the fears of embolism and thrombosis are very much exaggerated. Experiments have proved that only the sudden and forcible injection or aspiration of a large quantity of air into the vein is able to cause embolism. Thrombosis can be avoided by using the veins of the upper extremities rather than those of the lower, for the possibility of thrombosis is greater in the lower extremities. Also, the steady drip from the needle is a sufficient safeguard against thrombotic occlusion in the vein.

Literature

1.—Kuhn: *Deutsche Ztschr. f. Chir.* Vol. CXXII, p. 90, 1913.
2.—Van Slyke, D.D.: Studies of Acidosis; Normal and Abnormal Variations in Acid Base Balance of Blood. *J. Biol. Chem.* 48: 153, Sept., 1921.
3.—Perfield-Teplitsky: Prolonged Intravenous Infusion and the Clinical Determination of Venous Pressure. *Arch. Surg.* Vol. 7, No. 1, 1923.
4. Düttmann, G.: Bruns, Beitrage. Vol. CXXVIII, p. 68, No. 1, 1923.
5.—Matas, R.: The Continuous Intravenous "Drip". *Ann. Surg.* Vol. LXXIX, No. 5, 1924.

Modern Thought Upon Idiopathic Epilepsy

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THE literature of epilepsy is so immense that this brief review will necessarily concern itself only with the more worth-while contributions of 1920 to 1926. Inasmuch as prophylaxis and treatment depend upon pathogenesis, the subject of causation—precipitating factors and mode of operation—is paramount.

There is no need to define here the term epilepsy, other than by emphasizing the symptomatic character of the disorder with the use of the now popular term, "the epilepsies." Though our attention is confined to convulsive phenomena of unknown origin, the traumatic epilepsies and those occurring in the course of arteriosclerotic or paretic brain tissue degeneration are, after all, as unintelligible as the socalled idiopathic type. Because a definite brain lesion exists, one is apt to assume that all is explained, without pausing to consider that many other individuals have similar lesions without developing fits. The damaged tissue doubtless constitutes a *locus minoris resistentiae*, but what is it that causes the convulsive seizure?

Heredity

Of late years hereditary predisposition is less readily accepted as an explanation than formerly. Myerson[1] quotes Binswanger as finding a "tendency" in the ascendants of 35 to 40 percent of epileptics, and Thom[2] as finding, in recent years, only 1.8 percent of actual epileptics in the 553 offspring of 138 married epileptics years ago. Dejerine reported 67 percent and Kraeplin 87 percent of neuropathy in the ascendants, but Burr[3] more recently found actual seizures in only 126 ascendants or near relatives of 1,449 epileptics, though 165 relatives had infantile convulsions not followed by the establishment of an epileptic habit.

Feeblemindedness and mental disease are found in family groups in all public institutions for their care, but related groups of epileptics seldom occur in the writer's experience, and in only 4 instances out of 1,500 patients at the Massachusetts state hospital for epileptics, according to Myerson.

Modern Investigations

Rosett[4] calls attention to what he terms the *normal epileptoid reaction* which occurs in conditions of fright and involves a fairly orderly sequence of events: a reduction of consciousness—known to psychologists as "emotional stupidity"; very possibly an inarticulate cry; more or less muscular rigidity; and finally trembling or jerking movements, with involuntary urination in some subjects. A train of events somewhat

the same though not so well defined occurs in falling asleep and awakening, especially in children, and it is noteworthy that paroxysms often happen at these times in epileptics.

Rosett's clever suggestion is in line with some recent trends of thought looking upon convulsive phenomena as resultant upon failure of cortical inhibition rather than direct irritation; but Pike and Elsberg[5] removed the motor area upon one side in cats and, with immediate injection of absinthe, produced clonic seizures on the same side as the lesion and tonic ones alone upon the opposite. Three weeks later, however, absinthe injections in the same animal brought forth clonic convulsions *upon both sides*. Interruption of the subcortical radiations by section above the optic thalamus and in the region of the corpora quadrigemina resulted in extensor rigidity after absinthe but only illy defined clonic "twitches." Upon the other hand, however, Pollock[6] produced clonic convulsions in the face area with picrotoxin after section of the brain stem in about the same region and concluded that the ganglion cells of the brain stem, as well as the higher centers, possess epileptogenous properties.

Dandy and Elman[7] injured the brain cortex of cats (to what extent not stated) and produced seizures with 1/7 the dose of absinthe necessary in normal cats, explaining the result as the effect of the toxin upon an area of lessened resistance. Southard[8] years ago, ingeniously suggested that the overgrowth of scar tissue in the brain cuts off enough association tracts to produce "simplified reflex areas," which react to stimuli with uncontrolled discharges akin to spinal automatisms such as the ankle clonus. Stanley Cobb[9] suggests an analogous explanation for the frequent occurrence of epilepsy in conjunction with feebleminded-ness.

Elsberg and Stokey[10] found that when they shut off brain circulation for 10 to 15 minutes the fits which regularly supervened upon its reestablishment were prevented by the circulation of a Ringer-Locke solution in place of the blood stream during the period of anemia. Their experiments, while of no assistance in localizing epileptogenous centers, seem to point quite clearly to the fact that some irritant substance is formed by the brain tissue within itself during the period of vascular stasis and thus introduces the question of the immediate cause of the seizures.

Body Chemistry

From time immemorial the intestinal tract has been under suspicion as the source of an endogenous toxin; witness the ancient therapy of a daily dose of magnesium sulphate, which has not been without some apparent good results. Cuneo (cited by Osnato[11], found, in 1922, in the blood of post-convulsants, a proteose which produced epileptic phenomena in animals, and formulated the theory that insufficiency of certain hepatic and intestinal functions results in failure to transform acid organic salts into sodium carbonate, thus reducing the body's alkali reserve and contributing to the formation of proteoses from nucleo-histone (in leucocytes and cell nuclei). *Thus the crux of the situation, according to Cuneo, is diminished alkalosis*, to which concept others subscribe; though Rosett[12], in an explanation of the convulsant effect of continued deep breathing (*hyperpnoea*) when practiced by epileptics, quotes Collif's and Backus'[13] conclusion that the symptoms are caused by a mild alkalosis; i. e., reduction of hydrogen-ion concentration in the blood, and Bigwood[14] views idiopathic convulsions as the effect of a spasmogenic toxin resulting from periodical tissue alkalosis.

It is not reasonable to suppose that both increased and diminished alkalosis can be causative factors in epilepsy. Much research will be necessary to clear up this apparent disagreement and the end result may be to discredit both views.

Pagniez[15] found that the serum and spinal fluid of post-convulsants produced fits in guinea pigs, while only 2 out of 21 nonepileptic patients gave a similar result (these were Parkinsonians) by way of f e e b l y convulsive movements. O s k a r Meyer[16] found that vessel-strip preparations did not pulsate in epileptics as in normal serum and concluded that this is either due to some inhibitory substance or the absence of a stimulating one. He is convinced that epileptic serum does not contain unusual amounts of histamine or epinephrin. Nevertheless, Heinrich Fisher (cited by Herman Fisher[17]), in view of the activation of striped muscle contraction by epinephrin, originated the operation of unilateral adrenalectomy, which has not attained much favor in this country though it still remains something of an issue in Germany. (F. Franke[18].)

Shaw and Moriarity[19], studying the blood of fasting children, found that after

the available glycogen reserve was exhausted, fat, for a time, became the principal source of energy, and as a result of its imperfect combustion acetone and ketonic acids were formed which united with the available alkalies in the blood thus reducing its ability to transport CO_2 and producing acidosis. Elsberg and Stookey in the experiments already quoted found that diminished alkalinity of the blood did not render cats more susceptible to absinthe convulsions, or to those following interruption of brain circulation. Also they found that a 72-hour fast did not lessen susceptibility, but nevertheless Wilder, of the Mayo Clinic, suggested (1922) the therapeutic production of acidosis by means of carbohydrate starvation together with a high fat diet, and Peterman[30] has lately reported excellent results in epileptic children with this treatment. The effect, he thinks, may be due to the anesthetic effect of aceto-acetic acid, a ketone body, which if administered direct is broken down into useless by-products. Why the effects persist after the diet is stopped is not so readily explained.

Possible Thyroid and Parathyroid Factors

The basal metabolism of epileptic children is normal or increased after convulsions (Fritz Talbot[31]), and from this fact Talbot concludes that thyroid therapy is not indicated. Nevertheless, Elsberg and Stookey found that thyroidectomy increased the susceptibility of cats to absinthe convulsions and Demole[32] suggests that, aside from its morphologic and stimulating action it plays a part in the neutralization of toxins, for which reason the extract may be of service in certain epilepsies. Bisgaard[33], in the course of extensive research, has come to the conclusion that the parathyroids have to do with the acid-alkali balance in the system and that disturbance of their function may bring about epilepsy as well as tetany. As a result of this suggestion *calcium* has recently come into some vogue as an adjuvant in treatment.

Buscanio[34] has demonstrated what he believes to be a crystalline protein in the colloid of the thyroids of epileptics and contends that the seizures are anaphylactic reactions to the discharge of this protein into the circulation. He cites combined figures of his own and others' research to show only 14.5 percent of nonepileptics with these crystals as against 71.2 percent of epileptics, and from this viewpoint logically advocates thyroidectomy and thyroid feeding. He has gained no especial following.

Foreign Proteins

Buscanio's theory, however, serves to bridge, after a fashion, the gap between the dysglandular theory of pathogenesis and the most fascinating one of protein sensitization. Much of the more recent literature concerns the possible relationship of anaphylactic shock and the epilepsies of unknown origin. Joseph Miller's[35] work upon the peptone treatment of migraine has naturally led him to consider the possibility of a similar therapy for its near relative, epilepsy. (A friend of the writer's told him the other day that after an airplane fall he developed migrane and had one or two seizures.)

The writer has used peptone in a small number of institution epileptics of long standing without effect; but Miller calls attention to the occasional success of Spangler's snake venom, typhoid and tuberculin vaccination, pregnancy (placenta proteins) and even typhoid fever in stopping seizures.

Wallis and Nicol[36] have reported protein sensitivity in epileptics. In a group of non-insane patients, aged 5½ to 39 years, not amenable to bromide therapy, 46 gave positive reactions to group protein tests, which sensitivity was lost for some time after fits occurred. Peptone by mouth led to cures (?) and improvement in 24 of these cases.

Ward and Patterson[37] quote Spratling as suggesting protein sensitization over 20 years ago, and inquire if a local change in the meninges may not occur, similar to the reactions of urticaria, eczema and hay-fever. Pfeiffer and Weeber[38] have tested the blood serum and urine of epileptics for *peptidase*, by titration with glycyl-tryptophan, and found this split-protein product increasing in the serum and decreasing in the urine in the hours, and even days before the attack, from which they infer that the seizure may be due to anaphylactic shock. Popea *et al*[39] arrive at a similar conclusion by another route.

Pathology

The pathology of the essential epilepsies has received comparatively little attention in the past few years, or research has proven barren of results when undertaken. Gliosis as a replacement phenomenon after cell destruction, distortion and diorientation of cells, with vascular changes, have been

reported as in the past, especially occuring in the horn of Ammon but these changes are most frequently found in old cases and are very possibly only secondary to primary causes. (Bertrand and Rives[30].)

Without any definite conception of pathogenesis it is evident that diagnosis must be symptomatic and that the seizure will determine it in practically all cases, though at times personal makeup and psychic equivalents may be presumptive evidence. Hysterical attacks—psychogenic epilepsy—may be exceedingly difficult to differentiate, especially in view of the fact that so good an authority as Marchland[31] cites cases of epileptic grand-mal without loss of consciousness.

Pierce Clark[32] views the attack in many cases of apparently essential epilepsy, *as a means of escape from the troublesome realities of life* and advocates psychoanalysis, together with appropriate modification of the patient's environment.

Focher[33] recites the various methods of diagnosis in the absence of actual observation of the fit, as follows: presence of the epileptic "habitus," loss of pupillary reaction to light (this may occur in hysteria); post-convulsive Babinski (not always present); albuminuria (doubtful); leucocytosis with eosinophilia (post-convulsive); *hyperpnoea* (deep breathing carried out continuously for 20 minutes or more); and finally his own method of establishing differences of tactile sensibility to the two-point test on the volar surfaces of the last phalynx of the index finger of the right and left hands. Focher claims his test is rapidly and easily made and diagnostic in a high percentage of subjects, though why is difficult to understand.

Patrick and Levy[34], considering the prognostic value of infantile convulsions, have deduced from their material that single attacks are most common in children who are not to become epileptic, and that *seizures occurring before the age of six months and after seventeen months have the most serious prognostic implications.* Attention should be called to the status, described by Friedman in 1906 as *pyknolepsy* (cited by Adie[35]), in which "heaped up" attacks of *petit-mal* occur in children between the ages of 4 and 10 years—from a half-dozen to 100 per day; continue uninfluenced by medication for a few weeks to a few years and disappear without doing permanent damage. The writer has followed one such case for many years after the attacks ceased without observing bad after results.

Treatment has already been touched upon here and there in relation to the various theories of pathogenesis as mentioned. Obviously in the presence of so many etiologic possibilities a specific therapy, applicable to all essential epilepsies, is out of the question. One fact, however, is very clear; the patient must be treated as a whole, and before this can be done must be carefully studied upon chemical, biological and psychic levels. Phenobarbital and the bromides are potent palliatives by way of reducing the pathological nerve cell activities of the epileptic, but care needs be taken by the physician to avoid their benumbing effect upon his own cerebration.

Bibliography

1.—Myerson, Abraham. "Inheritance of Mental Diseases," p. 56-72.
2.—Thom, Douglas A. Cited by Myerson, *loc. cit.*
3.—Burr, C. W. *Arch. Neurol. & Psychiat.*, v. 7, p. 721.
4.—Rosett, John. *Arch. Neuro. & Psychiat.*, v. 9, p. 689.
5.—Pike, F. H., and Ellsberg, Chas. A. *Am. J. Physiol.*, v. 72, p. 337.
6.—Pollock, L. J. *Arch. Neurol. & Psychiat.*, v. 9, p. 604.
7.—Dandy, Walter E., and Elliman, Robert. *Johns Hopkins Hosp. Bull.*, v. 36, p. 41.
8.—Southard, E. E. *Am. J. Insanity*, v. 64, p. 607.
9.—Cobb, Stanley. *M. Clinics of N. America*, March, 1922.
10.—Ellsberg, Chas. A., and Stooky, Byron P. *Arch. Neurol. & Psychiat.*, v. 9, p. 613.
11.—Cuneo, G. Cited by N. Osnato. *Arch. Neurol. & Psychiat.*, v. 9, p. 505.
12.—Rosett, John. *Brain*, v. 47, part 3, p. 293.
13.—Collif and Backus. Cited by Rosett, *loc. cit.*
14.—Bigwood, E. J. *Ann. de méd.*, v. 16, p. 119.
15.—Pagniez, P. *Presse méd.*, v. 32, part 1, p. 45.
16.—Meyer, Oskar. *Munchen. méd. Wchnschr.*, v. 70, p. 1312.
17.—Fisher, Heinrich. Cited by Herman Fisher. *Ann. Surg.*, v. 76, p. 176.
18.—Franke, F. *Zentralbl. f. Chir.*, v. 51, part 1, p. 697.
19.—Shaw, Ed. B., and Moriarty, Marg. *Am. J. Dis. Child.*, v. 28, p. 553.
20.—Peterman. *J. A. M. A.*, v. 84, p. 1979.
21.—Talbot, *et. al. Am. J. Dis. Child.*, v. 28, p. 419.
22.—Demole, V. *Schweiz. méd. Wchnschr.*, v. 54 p. 842.
23.—Bisgard. *Acta med. Scandinav.*, v. 61. p. 433.
24.—Buscanio, V. M. *Schweiz. Arch. f. Neurol. u. Psychiat.*, v. 11-12, p. 261.
25.—Miller, Jos. *Am. J. Med. Sci.*, v. 168, p. 635.
26.—Wallace, R. L., and Nicol, W. D. *Lancet*, v. 2, p. 741.
27.—Ward, J. F., and Patterson, H. A. *State Hosp. Quart.* (N. Y.), No. 10 (May, 1925), p. 429.
28.—Pfeiffer, H., and Weeber, R. *Klin. Wchnschr.*, v. 4, p. 1123.
29.—Popea, A., *et al. Compt. rend. Soc. de Biol.*, v. 92, p. 1170.
30.—Bertrand, I., and Reeves, J. *Rev. Neurol.*, v. 1, p. 129.
31.—Marchand, L. *Presse méd.*, v. 32, part 2, p. 290.
32.—Clark, Pierce. *Brain*, v. 43, p. 38.
33.—Focher, L. *J. Nerv. & Ment. Dis.*, v. 62, p. 337.
34.—Patrick, H., and Levy, David. *J. A. M. A.*, v. 82, p. 380.
35.—Adie, W. J., *Brain*, v. 47, p. 97.

Diathermy*

Clinical Applications and Case Reports

By E. M. STANSBURY, B.Sc., M.D., Vermillion, So. Dak.

HEAT, within physiological limits, is nature's greatest remedy for maintaining and restoring the health of body tissues. Normal tissue responds pleasantly to diathermy treatment when properly administered, up to 115° or 116°F. This degree of heat may be called pleasant tolerance. Heat in the tissues from 110° to 116°F. is altogether constructive in its effect, except in the presence of contraindications.

Diathermy should not be used when its great absorptive effect may overwhelm the system with toxins, bacteria or emboli; nor when uncontrollable hemorrhage may result from vasodilatation.

Let me remind you of the effect of physical heat upon chemical reactions in general. We all know that every degree of heat will hasten chemical reaction, as is proven by numerous laboratory experiments. The digestive effect of normal enzymes is hastened by each degree of heat added, up to a physiological limit. We may consider the reactions of nature's protective enzymes and antibodies that are normally found in the blood, to be chemical in nature. Therefore, heat to a physiological degree, if applied in the proper place to activate these enzymes, would naturally have a beneficial effect by hastening and increasing their activity. Heat to a certain degree above body temperature will activate phagocytes and increase the opsonic index.

Effects of Heat

Heat applied to contractile tissues will produce relaxation; applied to arterioles and capillaries it produces a dilatation of these vessels and causes arterial hyperemia. Heat, being sedative in nature, will relieve pain when applied directly to the diseased tissue cells, whether the pain is caused by toxins or mechanical injury to the body cells. Conversive heat is more sedative than morphine.

Nature alone may succeed by her own method of combating infection and resolve most of the fibrosis following acute inflammation; and some of it, more or less, in chronic inflammation. This is accomplished through the solvent action of the enzymes normally present in the blood. Thus heat assists in resolving old chronic fibrosis as well as a beginning fibrosis following acute inflammation.

We should produce heat in the diseased area; dilate the blood and lymph vessels to nourish the functioning cells better; and activate the enzymes that will help to resolve the fibrosis which has produced a partial atrophy of functioning cells by compression.

Heat, by its effect on the tissues will hasten osmotic processes. This is aided by the dilatation of blood and lymph vessels, and by opening up intercellular spaces. All the cells are bathed in an abundance of fresh lymph. These are the methods by which diathermy is able to promptly and efficiently remove serious swelling, caused by inflammatory expudates. Passive hyperemia is prevented or, if it has occurred, it is changed to an active hypermia, without which wound healing is retarded or wholly prevented.

The effect of diathermy, or any heat above 110°F., on many bacterial cells, is that of attenuation. The germ is made less virulent to the body tissues and less able to resist the solvent action of the greatly activated normal enzymes and antibodies of the blood. From the above facts, one can see that diathermy increases the resistance of the body tissues against infection, while at the same time it lowers the vitality of the germ, thus hindering it in its fight for supremacy.

I do not intend to give the impression that good therapy should exclude any scientific method of treatment. I merely ask that we should include diathermy as a valuable assistant to any and all good measures. For an illustration let me mention acute articular rheumatism. If salicylates alone will enter the blood and serve their purpose in an inflamed joint without any aid other than that given by nature, how much better work can they do if they are forced through that joint in much greater quantity by quickly establishing an intense arterial hyperemia in the diseased area, by the use of diathermy? By this illustration I want you to see that physiotherapy is an aid to rational drug treatment. In all cases the cause of disease should be found and eradicated as soon as possible.

*Read before the Yankton District Medical Society, December 18, 1925.

Surgical Shock

Every surgeon has met with the condition known as surgical shock. The ordinary treatment consists of stimulation, elevation of the foot of the bed, and supplying of external heat. All surgeons know that these measures bring about a response altogether too slowly. What would a surgeon give for a method by which he could generate heat within the body without any loss on the part of the patient, thus reserving all the fuel within the patient's body for the purpose of nutrition?

In this condition, diathermy can play a part that is impossible to duplicate by any other method and its action is prompt and far more efficient than any other known way of supplying warmth to the vital organs of the body. This generation of internal heat activates chemical processes, and soon the vital centers are functioning again and the condition of shock is over. A few properly directed trials of this method and any surgeon will be convinced.

Diathermy and Wound Healing

We must demand of scientific therapy that it be able to produce, initiate, accelerate or increase with accurate precision, certain definite physiological reactions. Many such reactions can best, or only, be produced by diathermy. It is to these reactions I wish to call our attention.

By close analysis, one can see that the reactions caused by diathermy are exaggerated duplications of nature's own effort to heal any inflammation. For an example, let us assume an open wound in the tissues of the body. Of course, all these wounds have more or less living bacteria planted in them. Good surgical judgment says to stop the hemorrhage; remove foreign substances and dead or hopelessly devitalized tissues; antisepticize and drain the wound properly; and perhaps use the Carrel-Dakin method of irrigation. This is all good, but why not start diathermy on such a case just as soon as the surgical work has been done? This would relieve pain, flush an enormous amount of fresh blood through the wounded tissues, and restore and increase their resistance to bacterial invasion; also in many cases it would flush the area with so many activated phagocytes that the few germs which were introduced at the time of injury would have no chance to multiply. Soon they would all be devoured by the polymorphonuclear leucocytes, their dead bodies would serve as a bacterial vaccine, and the wound would become a sterile field. If the job were left to nature, and sometimes to nature plus ordinary after treatment, it would be hours, or days before a sufficient arterial hyperemia could be aroused to perform this work; and all this time the bacteria would be multiplying so rapidly that, by their numbers and increased virulence, they would overwhelm nature or long delay the healing process. These principles are true and sound. If the application fails, do not blame the system, but find the reason.

This same application of the principle of diathermy is also rational when an inflammation has started, but the field is well drained, thereby preventing a dangerous amount of absorption of toxins or bacteria during the diathermy treatment. The same is true of an acute bronchitis or early pneumonia. A few well directed applications of diathermy to early cases of pneumonia will convince the most skeptical that this treatment should be our first thought in such cases.

In summing up we find the following indications and contraindications for the medical use of diathermy:

Indications:

1.—For establishing quickly an intense arterial hyperemia and increasing the nutrition of the tissues.

2.—For dilating lymph channels and bathing tissue cells with fresh lymph and activated enzymes and antibodies.

3.—For increasing osmosis and cellular metabolism.

4.—For increasing the opsonic index and the local concentration of activated phagocytes.

5.—For its absorptive effect on inflammatory exudates.

6.—For sedation without secondary harmful effects.

Contraindications:

Diathermy should not be used where its great absorptive and solvent effect might flood the circulation with too great an amount of toxins, bacteria or emboli, nor where uncontrollable hemorrhage might be started.

Practical Use in Surgery

After studying the above principles I have, for more than a year, been using diathermy as an aid to surgery in the prevention of wound infection and industrial injuries, and also in the prevention of bronchitis or pneumonia following ether anesthesia for major operations. During this time I have not had the slightest chest complications following ether, and some of

these patients went under the anesthetic having a troublesome cough.

To date I have had only one wound infection develop where diathermy was used, and that was a gun-shot wound in a man whose right ischium was shot away, and all the tissues in the right gluteal region were severely lacerated. This man developed gas bacillus infection and died on the sixth day.

The use of diathermy in early pneumonia has given my patients the best results of any therapy for this malady that I have ever known.

Case Reports

The following is a brief report of a few cases:

Case 1. Male, age 78, weight 180 pounds. For years had had myocarditis, with slight edema of both legs below the knees. Developed a severe bronchitis and two days later began expectorating bloody sputum. Temperature 104°F. Breathing became hard and rapid. Lips were cyanosed and pulse intermittent.

Diathermy was started during the first twenty-four hours after the onset of the pneumonia. These treatments were given twice daily for five days. Symptomatic relief was immediate; cyanosis improved; breathing and expectoration were easier. Patient made a gradual improvement and the fever dropped by lysis, remaining normal all day on the fifth day of the disease. He did not miss a single meal during his illness. This history is quite typical in pneumonias if diathermy is started very early.

Case 2. Female, age 22.

For over three months had had acute multiple arthritis. Removal of tonsils brought only slight remission. The disease relapsed worse than before, involving the right ankle and knee and all joints of both hands, wrists and elbows. All movement of these joints was limited and very painful. Purpura hemorrhagica involved the whole body and almost covered both legs below the middle of the thighs and down to the soles of the feet. The heart gave symptoms of beginning endocarditis. The patient had vomiting and hematuria when she entered the Vermillion Hospital. For several weeks she had not slept without drugs.

Sedative diathermy was given to all the painful joints and after these were treated, it was given to the heart. The relief was almost miraculous. All the joints could function with only slight pain and a feeling of stiffness after the first treatment was finished. Ultraviolet radiation was given daily for its general tonic effect.

The first night the patient slept normally all night with only two short interruptions; in ten days her symptoms, including those of the heart, were normal.

Case 3. Male, age 19 years.

While hunting, his gun was accidentally discharged and a full charge of shot went through the center of the right ulna, destroying about two inches of it, and tearing away the flexor muscles and tendons completely, over the middle third of the flexor surface of the arm.

The wound was given the usual surgical treatment, followed by the Carrel-Dakin method of irrigation. Five thousand units of antitetanic serum were given. Diathermy was given twice daily for its sedative, germicidal and nutritional effect. The wound did not develop the slightest sign of infection.

Case 4.—Male, age 45 years.

On Oct. 2, 1925, he was unloading an old plow from the rear end of a truck. The beam of the plow caught his jacket and pulled him off the truck and caused him to fall on the plowshare, the point of which entered the abdomen about two inches below the umbilicus, making a cross section of the right rectus abdominus muscle, and pointing upwards, backwards, and inwards, striking the spine.

The patient pulled himself off the plow and immediately the intestines came out through the wound. He gathered the exposed viscera in his extremely begrimed hands and walked across the lot to his house where he lay down on a bed and a doctor was called.

When the doctor arrived most of the intestines were outside the abdomen and in contact with very badly soiled clothing. Without any thorough cleansing of his own hands the doctor replaced the intestines and placed a gauze pad over the wound.

An hour and a half later the injured man was brought to the Vermilion Hospital where, after a uranalysis revealing no trace of blood, ether was administered, the abdomen prepared and opened and the usual search for injuries was made.

The omentum was found protruding from the wound. This portion was very dirty and was ligated and removed. A further search revealed no injury to bladder nor ureters. Two perforations, one 1 inch and one 2 inches long, were found in the ileum at about its central point. Through these the bowel contents had been discharged very freely into the peritoneal cavity. Several loops of intestines had severe abrasions on the peritoneal surface, being intensely tatooed with the rust from the old plowshare. These spots, of course, could not be satisfactorily cleansed.

The perforations in the ileum were repaired and the abdomen cleansed mechanically by removing tufts of hair carried from the abdominal skin, a few particles of clothing, much bowel contents, and some blood clots. After this the whole peritoneal cavity with its contained viscera was washed out three times with physiological salt solution. A tube drain was placed to the bottom of the pelvis, and a cigarette drain to the vicinity of the repaired ileum. The abdominal wall was closed as usual around these drainage tubes. Debridement was done to the injured portion of the abdominal wall. Five thousand units of antitetanic serum was given, the patient was placed in bed and, immediately, sedative absorptive diathermy treatment was given through the

entire abdomen, for one hour, before the patient was awake from the ether. After this the treatment was given twice daily for the first five days, and once daily (thirty minutes of treatment) for the next five days.

After the first three treatments the line of incision was avoided in order that the great absorptive effect of the diathermy might not prevent the formation of a firm scar. The Fowler position was maintained and physiological salt solution was given per rectum.

On the second day one diathermy treatment was given through the chest, which is our custom for the prevention of ether bronchitis or pneumonia.

Daily, gradually-increased doses of mercury quartz lamp radiations were given for the stimulating effect, applied only to the front of the chest and legs because of the inconvenience of turning the patient.

The postoperative treatment of this man was watched personally by Dr. J. C. Ohlmacher, Professor of Pathology and Bacteriology, University of South Dakota, and by Dr. J. H. Sayer, of Seattle, Washington. Dr. Sayer was a Major in the U. S. Army Medical Corps in the A. E. F. and served throughout the American participation, being on the front all through the war. He is therefore thoroughly familiar with the usual outcome and postoperative history of such cases.

The temperature was never above 101.6° F., nor the pulse above 108 per minute. On October 7 the abdomen was flat and soft and only odorless serum appeared on the dressings. On October 8 the temperature and pulse were normal, and so remained. The patient sat up on the twelfth day and went home on the seventeenth day, with the wound nearly healed. The recovery was essentially the same as if the patient had had a clean operation for appendicitis.

Comment: *Case* 4. Occasionally cases like this make a recovery when treated only by the usual operation and after care. However, I have never heard of such a recovery with no foul pus developing in the peritoneal cavity nor other signs of peritonitis.

This case developed no signs of intra-abdominal infection. The drainage material and dressings at no time showed any evidence of the presence of infection.

The absence of pus, odor, and peritonitis is so unknown in such cases as this one, that the character of this recovery can not be called a mere accident. So far as I know this is the first case on record where diathermy has been thus used immediately following operation, and as part of the after treatment of abdominal injuries, for the purpose of preventing and aborting peritonitis.

For explanation of the principles of this therapy, we refer the reader to Dr. C. M. Sampson's book, "Physiotherapy Technic," published by C. V. Mosby Co.

If these results can be regularly duplicated, it means a revolution in our methods of after-treatment in abdominal and other injuries where no contraindication to diathermy exists. This improved method will give much hope to the heretofore almost hopeless cases where inflammation (infection) cannot otherwise be controlled.

This case has been reported in the *American Journal of Physical Therapy* for December, 1925. I repeat it here because, so far as I know, there is no other such case in history where absolutely no intra-abdominal inflammation developed. I give diathermy the credit for producing this most remarkable recovery.

Improvements in Instruments and Technic

The question arises in many minds: If electrotherapy has so much to offer the physician for the treatment of disease, why is it that more physicians are not studying the matter seriously, and why are so many prominent men openly condemning its use?

As I see it, the reason is simple. A few years ago many electrical appliances were placed upon the market and sold to physicians for therapeutic use. At that stage of our knowledge these machines had not been perfected so that they could meet the therapeutic demands. Neither had medical science progressed far enough in its analysis of the natural reactions necessary to be produced in order to properly treat the disease by physical measures. The lack of mechanical and therapeutic knowledge brought only a chain of failures, and electrotherapeutics received a "black eye."

There was a time when x-ray therapy was condemned. Only a few years ago many of our leading medical men throughout the world laughed at the suggestion that radium might be used in the treatment of disease. A few skilled experimenters have proven to the medical world that these methods of physiotherapy are of great importance, and their usefulness is gradually being established.

It required intensive study of the experience of the reconstruction officers, during and after the War, to analyze physiotherapy and properly co-relate physics and physiology to such an extent that our scientific physicists were able to produce electrotherapeutic machinery with which we are now able to imitate nature by producing within

the human body many very important physiological reactions which are of the greatest value in assisting her in her struggle against disease.

Before he died, Osler was credited with this statement, "In the future the greatest advancement in treatment will be made by the use of the newer forms of physical therapy."

That day is now here, for the principles upon which the science of physiotherapy rests are already as well established and analyzed as any principles we have in the science of surgery and medicine. I cannot understand how any man can write or talk against the principles of physiotherapy without making a very careful and analytical study of the subject before attempting to criticize it. I do not mean by this that no mistakes can be made in the using of physiotherapy. I do mean, however, that such mistakes are due to ignorance or accidental misapplication of the principles. The careful student will judge the value of physiotherapy by the principles on which it rests and not by the individual, who in a careless, half-baked manner attempts to apply this principle.

Many doctors have not mastered the subject of diathermy before using it. This means poor technic and often failure, and perhaps this is the reason why some very prominent medical men have given diathermy destructive criticism. I want to ask all such men to study well the principles of diathermy and then be sure to measure men by the principles and not the principles by the men. We do not say that the Wassermann test is a failure because many who try to apply the test get the wrong results. Why, then, should we cast aside the principles underlying diathermy because some enthusiastic writer has described the incorrect methods of applying this treatment? The critic should spend his energy correcting technic, rather than tearing down the pillars of our therapeutic structure.

Technic

This brings up the question of technic. This is a very large subject but not difficult. It is all-important in every minute detail. Time will permit here, only a few general remarks on this point.

Every doctor who becomes interested in physiotherapy and intends to use it in his practice should study the subject so thoroughly that he will know the physics, the mechanics and the different methods of application just as thoroughly as he knows surgery, from the beginning of an operation to the placing of final dressings. He should know the subject in full detail, just as thoroughly as he knows any other branch of medicine that he may be using.

It is not proper for a physician to refer physiotherapy cases to a technician without sending full instructions. The doctor should know the patient and know the treatment and the technician should take orders from the physician and not give the orders to the physician.

Failures with physiotherapy, where such treatment is indicated, are often due to poor technic or to misapplication of the principle. Everything depends on positive and accurate knowledge covering every detail of the subject and after this the doctor must have properly constructed apparatus. This is absolutely essential. All apparatus should be as near fool-proof as possible.

All therapeutic science belongs to medical men. Let us claim this as our own, master the science of its application, and deliver it to humanity through the medical profession only.

25 Prospect St.

Clinician and Pathologist

THE intimate, vital processes of life are so different from terminal processes which the pathologist sees, that the physician who forms his opinions from what he finds on the autopsy table is apt to take too pessimistic a view of commencing disease conditions.

—Dr. Given Campbell, of St. Louis.

Heat Control in Septic Throat Cases

By W. E. KERNAN, M.D., Boston, Massachusetts

THE abdominal and cerebral cavities are lined with a membrane which is a non-conductor of heat, and they contain an enormous capillary circulation—greater, in fact, than that of any other part of the body. The cerebral capillary supply is even freer than that of the abdomen.

The mucous membranes of the gastro-intestinal tract are continuous with those of the pharynx, nasal cavities and middle ears.

The pneumogastric nerves, having both motor and sensory fibers, supply the abdominal organs and also the structures of the pharynx, larynx and the tympanic membrane.

During the process of digestion there is a physiologic hyperemia of the organs concerned in that process, which continues until the process is completed. During this time there must be a compensatory anemia of other body structures. When the blood is released from the abdomen by the completion of digestion it returns to the general circulation enriched by the nutritive substances it has absorbed from the bowel.

In febrile diseases the digestive juices are diminished, and the giving of solid foods having a bulky residue, or of foods difficult of digestion, results in prolonged disturbances of the circulatory balance and in the collection, in the bowel, of masses of undigested material which gives rise to distress and to serious irregularities in the general circulation and the pneumogastric innervation.

It has been my belief for years that there was a continuity and reciprocity of blood and nerve supply between the abdominal organs and those of the upper respiratory tract, and that, in the adult, this developed into what might almost be called a secondary circulation. I have felt that the reason why children were so liable to congestive and inflammatory affections of the nose and throat was because this reciprocal blood supply or secondary circulation was, in them, imperfectly established or imperfectly functioning or both.

Upon this hypothesis I concluded that it was rational to treat acute infections of the nose, throat and ear, in children, by putting them to bed in a room having a moderate and even temperature, and applying continuous refrigeration over the pyloric end of the stomach by means of an ice bag; the diet to consist of nothing but egg albumin and predigested cereal foods, which would put the least possible tax upon the digestive organs and permit prompt circulatory equalization.

I have applied these methods in several hundred cases of acute diseases with highly gratifying clinical results, but there has been no opportunity to check my findings by laboratory examinations, although the absence of acute toxemia was noticed in all cases.

Desiring to test results by laboratory findings I have recently treated 39 cases of clinical diphtheria by these methods, without the use of antitoxin nor any internal medication whatever, with results which have surpassed those obtained by the use of other measures. In 29 of these cases the diagnosis was confirmed by laboratory examinations, and the remaining ten were unmistakable clinical diphtheria and were so reported to the authorities.

All of these cases were treated solely by the continuous application of an ordinary ice bag, the size of a tea-plate, over the right epigastric region, and the administration of a diet of ready assimilibility. The results were practically uniform in all cases. I shall report six of these cases in some detail in order to bring out certain points in the treatment.

General Management

In general, the management of all the cases was the same. The ice bag was continuously applied, day and night, as shown in Fig. 1, directly to the skin. It is important that the bag and the skin be kept *dry* at all times, and in order to assure this it is necessary to have two bags which can be alternated frequently.

The ice bag must not be removed until the patient's temperature has been continuously below 99°F. for at least 24 hours. It may then be left off during the night. The temperature should be closely watched for several days after the ice is removed and if at any time it rises above 99°F. the bag should at once be reapplied.

Best results are obtained when the temperature of the sick-room is kept at or slightly above 75°F. If it falls below that figure the patient's temperature is likely to

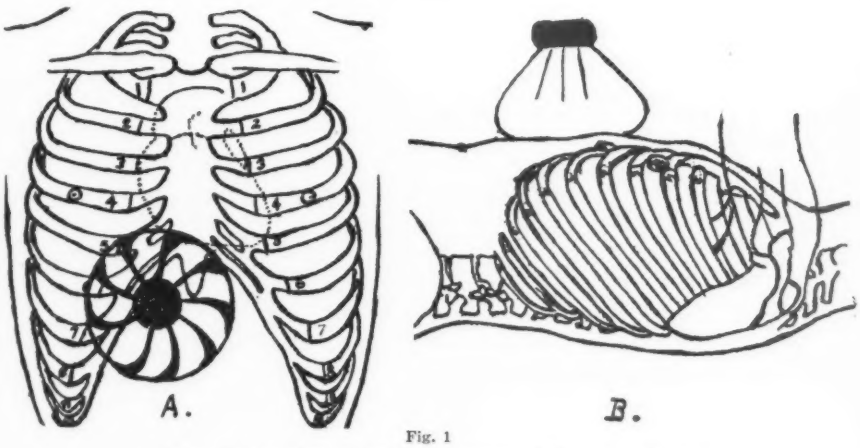


Fig. 1

A. Shows anterior view of ice-bag, in proper position for refrigeration.
B. Shows lateral view of ice-bag in proper position, with well-mounded portion of ice required to transmit the cold through the thin abdominal wall.

rise, due, probably, to an effort at equalization of the body heat. At this temperature, too, few bed coverings are required, and thus there is little weight on the patient's body.

The cereal or heat-producing food used was Horlick's malted milk, though it is probable that some similar product would act equally well. Children received one heaping teaspoonful of this food, in a cup of hot water, morning, noon and night. For adults the quantity of food was increased to 2 or 3 teaspoonfuls.

As an alternate or in addition to the cereal food—depending on the case—children were given the white of one egg, to be swallowed whole, like an oyster. Adults received the whites of 2 or 3 eggs in the same manner.

There seems to be some definite but unexplainable relation between the temperature of the outside air and the character of the food to be given. If it is cold outside the heat-producing food should be given regularly; but if the outside temperature rises it is better to give the egg albumen in place of the carbohydrate. Case No. 6 shows a rise of the patient's temperature, coincidental with a rise in the outside temperature, carbohydrate food, exclusively, being given. This relation may prove to be fortuitous, but I have seen it occur with sufficient frequency to make me believe that some connection exists.

It is now my practice to partially or wholly replace the carbohydrate food with egg albumin whenever the outside temperature is above 40°F. In very cold weather it may be necessary to give a fourth feeding of the heat-producing food in order to keep the patient comfortable.

Another reason for giving foods in the minimum quantity required to keep up the metabolic processes is that it prevents any gain in weight, which would be a handicap to a patient who is struggling with an acute febrile disease.

All cultures noted were examined and reported upon by the bacteriological laboratory of the Boston Health Department, and I have the original reports in my files.

Of the six cases I shall report, selected from the 39, each illustrates some one or more of the points I am trying to make.

Case Reports

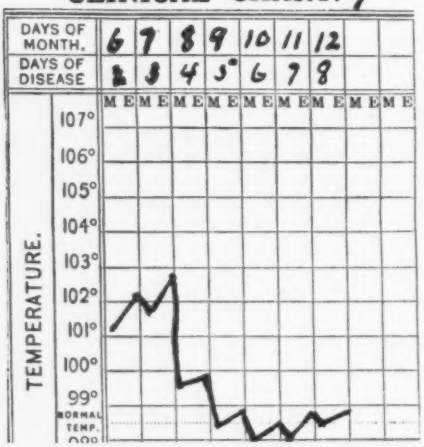
Case No. 1. J. G. Treatment was begun on this case on June 5, 1924, on the basis of a telephone conversation giving typical symptoms. The ice-bag was applied as described at 8 A. M. and egg albumin given three times a day. No effort was made to keep the room temperature at 75°F. Culture taken June 6 (after treatment had continued for a day) was negative. Treatment was stopped on June 9, and a culture taken the next day was reported to be negative.

This was clearly a case of clinical diphtheria, and I believe that the early use of the treatment described caused the first culture to be negative.

Case No. 2 J. Q. Treatment was begun at 5 P. M., January 11, 1921. Culture taken at 9 A. M., January 12, was reported positive. The ice-bag was applied and carbohydrate feedings given three times a day.

On January 12 the room temperature was below 75°F. up to 5 P. M. and a rise

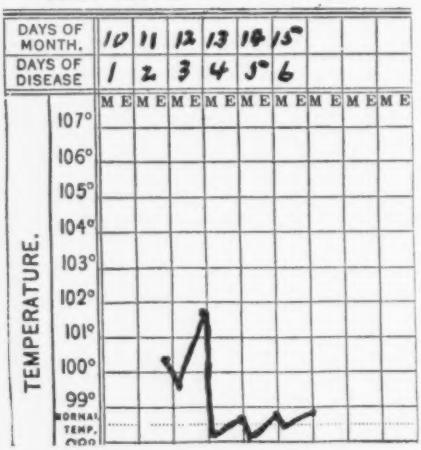
CLINICAL CHART. 1



of the patient's temperature is noted on that day. When the temperature of the air was raised that of the patient promptly fell and remained normal.

Treatment was stopped at 7 P. M., January 13, and a culture taken on the 17th was reported negative.

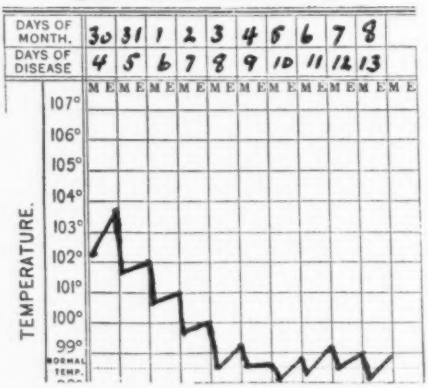
CLINICAL CHART. 2.



Case No. 3. G. C. This was the first case in this series. Treatment was begun at 9 A. M., on October 30, 1913, on the fourth day of the disease, and a culture taken at 4 P. M., on the same day, was reported "suspicious." Clinically the case was one of diphtheria.

The ice-bag was applied and cereal carbohydrate feedings given, with the addition of a gruel of cooked oatmeal and milk, three times a day. The room temperature was kept at 75°F.

CLINICAL CHART-3



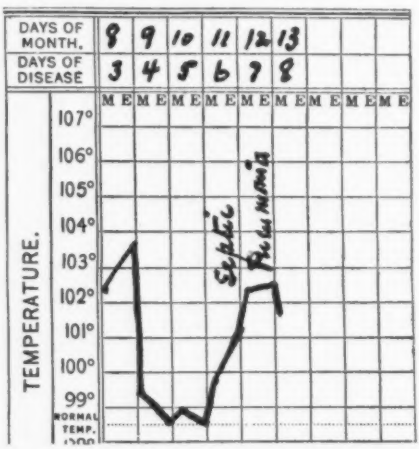
A culture taken on October 31, was reported negative, as was also a release culture taken November 13. Treatment was stopped November 3, 1913.

It will be noticed that the temperature came down much more gradually than in the other cases, which fact I attribute to the extra work thrown upon the digestive organs by giving the oatmeal gruel.

Case No. 4. M. B. Treatment was begun, after a positive culture taken on February 7, at 10 A. M. on February 8, 1921, with the ice-bag, predigested carbohydrate food and the room temperature at 75°F. The temperature, which had been high, promptly returned to normal.

On February 11, the temperature having been normal for two days, the family be-

CLINICAL CHART.-4



came overconfident and all went to bed, thus discontinuing the application of the local refrigeration. The patient's temperature

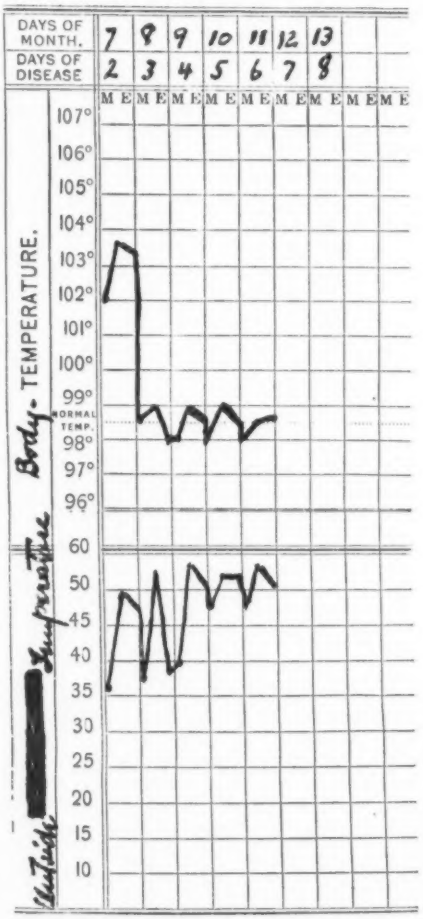
promptly rose and symptoms of pneumonia developed, resulting in death 2 days later.

This, the one fatal case in the series, shows the disastrous results from the indifferent use of local refrigeration, once it has been started. Death in this case was due, not to diphtheria, but to septic pneumonia.

Case No. 5. E. M. This case was the last of this series and was clinically and bacteriologically diphtheria, as a culture taken at 7 P. M. on February 7, 1925, was reported positive.

Treatment was begun at 9 A. M. on February 7, with the ice-bag and with the

CLINICAL CHART.-5



room temperature at 75°F. Because the outside temperature was above 40°F. most of the time (see chart), the cereal carbohydrate was fed only at the morning meal on the 7th and the morning and evening meals on the 8th, the other meals consisting of egg albumin.

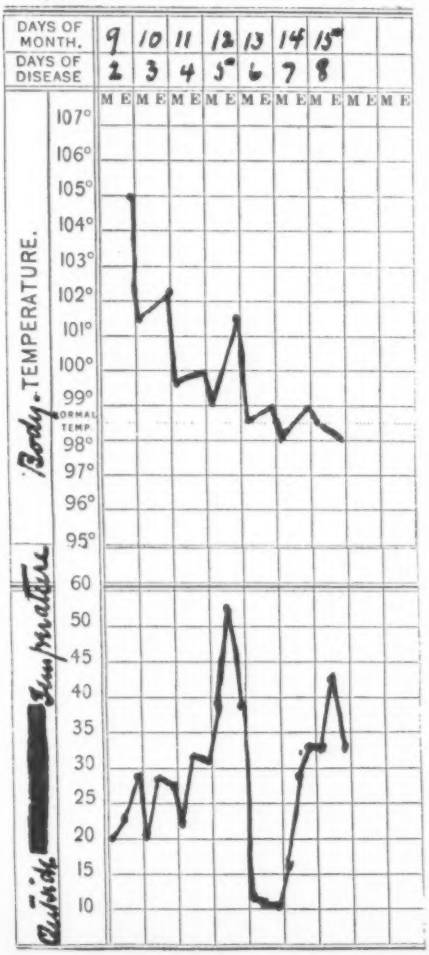
Treatment was discontinued at 10 P. M. on February 8, and the patient's temperature remained normal. A culture taken on the 8th was reported "contaminated," and one taken on the 10th was negative.

This case shows the proper handling of the feedings when the outside temperature rises.

Case No. 6 Mrs. F. W. W. This case was clinically and bacteriologically diphtheria. Treatment was begun at 9 P. M. on January 9, 1918, with the ice-bag and with room temperature at 75°F. As the outside temperature was low, carbohydrate feedings only were used.

On January 12, the outside temperature suddenly rose to 53°F., and at the same time

CLINICAL CHART.-6



the patient's temperature rose from 99°F. to 101.5°F., subsiding to normal the next day with the fall of the outdoor temperature. (See chart.)

A culture taken on January 10 was reported positive; while one taken on the 16th was negative.

I have endeavored to set forth my ideas briefly and clearly and to support them by clinical evidence, in the hope that others may become sufficiently interested to try this treatment in acute inflammatory conditions of the upper respiratory tract and to report the results obtained, to the end that the soundness or unsoundness of my hypothesis may be shown.

The Endocrine Treatment of Female Sterility

By EMILE POUGET, M.D., Alger, France

Former Chief of the Obstetrical Clinic of the Faculty of Medicine at Alger, France.

STERILITY in the female cannot be considered of a single origin, and, therefore, it is evident that endocrine therapy can not constitute its only treatment, but forms an important part of it. Bandler[1] even asserts that all cases of sterility are amenable to appropriate endocrine treatment only. As a matter of fact, results were observed in those women only who, according to Dalché, may be classified as infertile rather than sterile, because if the latter term applies to radical incapacity to conceive, the infertility of the first group may be only of a temporary nature; and, we may add, they could often be helped by medical measures, while in the presence of true sterility in a woman anatomically and physically unfitted for conception we are powerless.

Evidently, it is not always easy for the practitioner—and for the gynecologist as well—to differentiate with a degree of certainty between remediable infertility and incurable sterility. Very often the case is not clearly defined, and does not permit of unconditional confirmation in one direction or another. In all these doubtful cases, where hope of maternity exists and is often ardently desired, recourse should always be had to medical consultation and every means at the disposal of the physician should be used to bring about the realization of the patient's desire for maternity.

Infertility

The causes of infertility may be many. We are not dealing here with them in detail, but refer the reader to special treatises and the works of various authors who treated upon the subject[2]. We only wish to bring to attention that involuntary sterility is of fairly large occurrence in women. Pinard estimates that this is the case in 60 percent of every hundred childless families; 40 percent of these are due to the fault of the husband. Statistics available from large European centers and from overseas show that approximately 13 percent of unions are sterile after fourteen years of married life. We shall also leave out of consideration hereditary or acquired defects constituting an obstacle to fecundation, and it is evident that when such condition is present it is incumbent upon the physician to exercise care in forming a thoroughly substantiated opinion, which may often lead to therapeutic measures intended effectively to overcome pathological obstacles (tuberculosis, syphilis, arthritis, alcoholism), and not incline to discourage procreation.

Aside from this, however, the cases of infertility we have observed, and some of which we will discuss, confirm the opinion we have held for many years, that the infertility of a large number of women is of endocrine, and especially of ovarian, origin. In fact, there exists among a large number of women a condition which Dalché has correctly designated as glandular debility of the ovary. This debility, which may be primary or secondary, manifests itself by clinically evident secondary symptoms: feeble, irregular menstruation, occasionally total amenorrhea; undeveloped, infantile genital organs, whose development was arrested in a state before puberty. In these cases endocrine therapy furnishes the principal method of treatment. Polyglandular therapy: ovarian and thyroid substances when the syndrome of myxedema exists concurrently[3]; ovarian and pituitary substances

in general infantilism or adiposo-genital dystrophy; or ovarian hormone therapy alone when the ovary exhibits aplasia or primary hypofunction. This method of treatment should be supplemented by alkaline douches with a view of neutralizing vaginal acidity which is detrimental to the vitality of the spermatozoa.

The following are three cases where such treatment was instituted and gave results, which we believe deserve consideration, especially in view of the time period, in two instances quite prolonged, during which these patients were unable to conceive. Instead of whole ovarian extract, we administered in these cases the activating proteid-extract, agomensin, which seemed to us preferable because of its stimulating action upon the ovaries and the uterus. This action, among others, we have noted in many cases of amenorrhea and oligomenorrhea.

Case Reports

Case 1.—Mrs. S.; age 24. Married two years. No previous genital history. Periods regular, but slight.

Examination: Infantile genital organs; mammary glands undeveloped; secondary sexual characteristics slightly evident.

In June, 1924, treatment was instituted with agomensin, four tablets daily for ten days each month. At the same time alkaline douches were prescribed; less frequent intercourse was advised, especially at the approach of the menstrual periods.

In March, 1925, the patient returned for consultation; she was pregnant five months.

Case 2.—Mrs. P.; 35 years. Married 12 years. Adiposo-genital syndrome. Periods irregular and slight. No miscarriages. Consultation because of sterility.

No history of venereal infection. Uterus small, well placed, cervix tapering, round external orifice permeable.

Treatment: Thyroid, 0.10 Gram (fasting) and agomensin, 4 tablets daily for six days preceding periods. Alkaline douches; less frequent intercourse.

The patient was seen six months later; she was pregnant. Pregnancy came successfully to term—a well developed boy was born.

Case 3.—Mrs. L.; 28 years. Married ten years. Periods delayed, painless, but slight; later on, menstruation irregular, with extensive periods of amenorrhea. Weight 90 kilograms. Hair development slight. Intelligence very limited.

Consultation because of sterility; discouraged by the fact of having had two or three dilatations with laminaria.

Examination: Infantile genital organs; small uterus, in developmental stage, with long pointed cervix; external orifice permeable; no lesions of the adnexa.

I advised against surgical intervention, and prescribed, for ten days each month, preceding the menstrual period, agomensin and thyroid combined.

I saw the patient eight months later; she was pregnant, but suffering from a quite severe malarial infection. The paroxysms yielded to three injections of quinoform, 1.50 Grams a day. The patient returned to her home and continued the malarial treatment with 0.50 Gram of quinine daily for three weeks. The pregnancy went to term: a well developed male child was born.

In considering the observations made in these three women, we note that in every instance the sterility, which in two cases existed for more than ten years, coincides with a characteristic retarded development of the genital system. The uterus, distinctly infantile in the first case, pubescent in the other two, was nevertheless not atresic and showed a permeable cervix; aside from the retardation of its development, the organ was sound and without deformity. These conditions gave us confidence in appropriate therapy. We believed that the ovarian hypoplasia which caused the dystrophy could be influenced by organotherapy.

We have reason to believe that in these three women the result obtained was attributable to the fact that activation of the glandular complex was accomplished by ovarian stimulation, which is indispensable to ovulation and the nidation of the ovum. In the instance of the first patient it was apparent that the insufficiency was exclusively ovarian, and we administered the ovarian proteid-extract (agomensin); in the two others, which presented a very clearly-defined adiposo-genital syndrome, we combined agomensin and thyroid. We have used pituitary in combination when symptoms of insufficiency of that gland existed, because of the synergistic interaction of these endocrine organs.

Accessory Measures

Accessory measures likely to favor the results should not be neglected. Among these, dietary measures[4], the alkalinization of the vaginal region, sufficient intervals between intercourse (the frequency of coitus easily determines in cases of ovarian insufficiency, extent of the congestion unfavorable to nidation; however, if there exists a functional dysmenorrhea, its practice affects favorably the element of pain) which was to be practiced at the approach or at the end of the menstrual periods; thermal cures in suitable cases; diathermy[5], etc. Such treatment may certainly permit of fertilization of a large number of women

who, without such treatment, would remain forever sterile.

In closing, let us note that, contrary to opinion current, quinine in sufficiently large doses may be given without inconvenience to pregnant women, if a malarial condition demands it[6]. The gestational period is often the time when malaria occurs, and as this disease is frequently the cause of abortion[7], it is advisable to institute sufficiently energetic treatment, without consideration of the abortive action of quinine, which action manifests itself only rarely in women who are susceptible to it, and who are already in labor when the treatment is begun. On the contrary, treatment with quinine will, in instances, prevent "malarial abortion," as it is termed by Le Gall[8], in subjects suffering from malaria. These facts we have previously observed, and they have again been confirmed by the patient referred to in our third case.

Bibliography

1.—Bandler: *New York Medical Journal*, 1919, page 309. See also Jacoby: The Endocrine Aspect of Female Sterility. (*Medical Record*, No. 6, 1922, page 239.)

2.—Among others: Couvelaire: Sterility in the woman. (*Progrès Médicale*, September 18, 1921.) H. Vignes: Certain cases of sterility and natal mortality. (*Presse Médicale*, May 24, 1924.) P. Dalché: Infertility. (*Les Sciences Médicales*, January 31, 1925.) E. Douay: Female sterility. (*Gynécologie et obstétrique*, No. 4, 1925.)

3.—H. Vignes: Thyroid insufficiency and sterility. (*C. R. de la Soc. de Biol.*, April 29, 1922, and *Progrès Médicale*, June 17, 1922.)

4.—H. Vignes: Dietary measures and sterility. (*Concours médical*, July 13, 1924.)

5.—C. Castano: Treatment of sterility with diathermy. (*Gynécologie et obstétrique*, No. 3, 1925.)

6.—H. Vignes: Malaria and gestation. (*Journal des Practiciens*, July 22, 1922), and concerning the abortive action of quinine see by the same author: (Obstetrical Physiology, Normal and Pathologic).

7.—A. Laffont: Congenital malaria and hereditary malaria. (Thèse de Paris, 1910.)

8.—Le Gall: Pregnancy and malaria. (Thèse de Paris, 1917.) See also the article of De Brun: Studies of genital infantilism in malaria. (*Revue de médicine*, 1910, page 802.)

Cesarean Section*

With Reports of Three Cases

By CHARLES HENDLEY, M. D., Paris, Tenn.

IF WE may believe Pliny, the first case of cesarean section occurred before the birth of Julius Cæsar. According to this author it should be rather inferred that Cæsar took his name from the operation and not vice versa, because those who were born by means of this operation were, according to him, called *Cæsar aut cæsonis a matris utero*. Although Julius Cæsar's mother, Aurelia, long survived his birth, some writers still maintain that she underwent this operation and recovered.

There is, however, no certainty that, in these far-off times, surgeons dared to have recourse to the cesarean section for the purpose of saving the life of the mother and child. The profession was extremely skeptical of the operation before the sixteenth century.

The first case historically recorded is that of Bauhin, which he attributes to a butcher who performed it on his own wife. In the year 1500 the wife of Jaques Nufer was pregnant with her first child and feeling labor pains for several days had midwives come to deliver her. They made several attempts to bring about delivery but they were all useless and, as the patient experienced very severe pains, and there was no hope of relieving her, her husband asked permission of the president of Frauenfelden to undertake the operation of cesarean section. The permission was granted after much hesitancy. After imploring divine help, he laid his wife on the table and incised the abdominal wall, then the uterus, after which he extracted the child. Several sutures were placed in the abdominal wall. The wound healed happily without any complication, and several years afterward the woman was delivered of two children, one of whom became a noted politician who was alive in 1583.

During the fourteenth and fifteenth centuries, almost all surgical operations were performed by the barbers; and although these persons were legitimately entitled to lend assistance for slight wounds, boils and swellings, they, in reality, handled every sort of surgical operation. These barbers were devoid of the most elementary education and therefore the work performed by them was not of a very high standard.

Little by little the "Lay Surgeons" came to the fore, the most important association of these individuals being that of Saint

*Read before the West Tennessee Medical and Surgical Association, May 28, 1926.

Cosme. The quarrels they carried on with the medical clerks of the faculty fill the pages of medical history for a long period.

The butcher, Jaques Nufer, who was the first person to perform this operation, set the barbers a lesson by which they profited, and the operation of cesarean section became more frequent. During the sixteenth century it had an extraordinary vogue and has been more commonly used ever since that time.

Indications for Cesarean Section

This operation is indicated in cases where there is a living child, and some condition of the mother or child which will imperil the life of either; it is accordingly done:

I. When obstruction prevents the engagement of the child's head.
   1.—In cases of deformed pelvis.
   2.—Where a tumor is present.
   3.—When the child's head is unduly large.
   4.—When the pelvic conjugatae diameter, in the mother, is less than 3¼ inches.

II. When rapid delivery is necessary and cannot be accomplished by the vagina.
   1.—Eclampsia.
   2.—Placenta previa with rigid cervix.
   3.—Hemorrhage due to detachment of placenta.
   4.—Serious exhaustion of mother.
   5.—Death of mother.

Cesarean section may be performed: (1) before labor (two to four weeks before expected confinement); (2) during labor, or (3) after the death of the mother (postmortem cesarean section).

The operation of choice rests entirely with the operator. The high-forceps operation and version are now considered as no less dangerous than cesarean section. Repeated attempts at forceps delivery offer no contraindication for the operation, and it is my opinion that it is not done so frequently as it should be. The mortality is about one to two percent, in the hands of experienced operators. I have done the operation a number of times without a fatal termination. As a rule, the uterus is not damaged by the operation and future pregnancies are not interfered with, so that it may be repeated several times on the same woman.

Case Reports

Case No. 1.—I was called in consultation May 20, 1924, and upon my arrival I found a woman, twenty years old, in what appeared to be a typical eclamptic convulsion. Upon inquiry I found that she was a married primapara and that she had last menstruated about September 12, 1923. She had been in labor 12 hours. Preceding my arrival she had twenty-three convulsions and she did not regain consciousness between convulsions. Her general health had been excellent previous to May 20, 1924, aside from the general edema, which gave her no discomfort.

General Physical Examination: Showed no abnormalities other than marked general anasarca. Pulse rate 130; respiration 20; temperature, axillary, 96°F.; urine showed nothing abnormal.

Special Obstetrical Examination: The fetal heart sound was thought to have been heard. No pelvic measurements were made. The external genitals were edematous, and presented the appearance of the Hottentot apron. Upon digital examination a hard cervix was felt. There was dilatation to about the size of a dime.

A Diagnosis of pregnancy at full term, with puerperal eclampsia and marked anasarca was made, and a cesarean section was advised. The woman was transported twenty-eight miles, in a Ford truck, to the hospital at Paris, Tennessee. She continued to have convulsions while making the journey.

Upon her arrival at the hospital we at once proceeded to operate, after a hurried preparaion of the patient had been made. We did the modified Müller operation and extracted a large, living, male baby.

The woman did not have any more convulsions after the operation. She regained consciousness on the second day and made a good recovery, leaving the hospital, against medical advice, at the beginning of the third week.

Case No. 2.—Mrs. Y.; twenty-four years old; married; primipara; occupation, housewife, was referred to me June 20, 1924. Upon seeing her at the hospital at Paris, Tennessee, I found that she had the appearance of a pregnant woman, and that she was very anemic. She gave a history of menstruating in October, 1923. She had been in excellent health until the night of June 18, 1924, when suddenly she had a gush of blood from the vagina without pain. After about an hour she began to have pains, and after the pains she would have gushes of blood as the pains would pass off.

General Physical Examination: *Urine* negative; pulse rate 150; respiration 26; temperature 96°F. The pulse was markedly irregular and exhaustion was impending.

Special Obstetrical Examination, showed a very prominent abdomen which resembled that of a pregnant woman at full term. We could outline what we believed to be the fetal parts. We were unable to hear the fetal heart sound. No pelvic measurements were made.

Upon digital examination we found a completely dilated os uteri. A boggy mass covered the entire os. Vessels in the mass could be felt by the examining finger. A diagnosis of pregnancy at full term with

placenta previa centralis and, perhaps, a dead baby in utero was made.

Due to the mother's serious condition, we thought it would be safer for her to be delivered with as little trauma as possible, therefore we advised that cesarean section be made, even though we believed that a dead baby was in the uterus. This, we believed, would cause less trauma than any other means of delivery.

We did the cesarean operation and extracted a dead baby. The woman made a slow recovery. We thought for two weeks that she would die.

Case No. 3.—August 26, 1924, I was called in consultation to see Mrs. H., a married multipara, age thirty-two, occupation housewife. She gave a history of being pregnant at full term. Her general appearance was that of an extreme anemia; she was very pale and extremely nervous. Her general health had been good all during her pregnancy. She stated to me that her illness came on with a sudden gush of blood from the vagina, which continued as a severe hemorrhage. She had been in labor for 48 hours.

General Physical Examination: Pulse 148; respiration 20; temperature 99.2°F.; urine negative; other signs and symptoms negative.

Special Obstetrical Examination, showed the abdomen to be about the size expected in a pregnant woman at full term. The fetal parts could be outlined. The fetal heart sounds could not be heard. No pelvic measurements were made.

Digital Examination, showed the complete dilatation of the cervix, with a soft, boggy mass completely covering the opening, and excessive hemorrhage. We made a diagnosis of pregnancy at full term, with placenta previa centralis and a dead baby in the uterus. We thought that, due to the patient's serious condition, the cesarean operation would shock her less than any other means of delivery, and so advised.

The operation was done in the home, on a kitchen table. We extracted a dead baby. The woman made an uninterrupted recovery, and did not so much as have a stitch abscess.

These two last cases are cited to confirm our belief that there are certain cases in which the cesarean operation is the safest method of delivery, even though we are sure of extracting a dead baby.

The surgeon should be concerned only to do the best thing that can be done for each patient—the thing that offers the best hope of recovery—and should let the statistics take care of themselves.

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Pentamethylen Tetrazol (Cardiazol)*

A Preliminary Report

By WILLIAM WOLF, Sc.D., M.D., and
CARL P. SHERWIN, M.D., Sc.D., Dr.P.H., LL.D., New York City

FOR some time we have been interested in determining the fate of various organic compounds in the animal body and at the same time endeavoring to determine the physiologic effect of certain organic radicles and groupings[1]. In general, while we have been interested in the metabolism of these organic groupings the work has gradually narrowed down to a study of various organic nitrogen compounds and their effect on the heart action and subsequent effect on vascular tensions.

Most of the aromatic amines prove entirely too toxic to be useful in prolonged experimentation, causing a very rapid and dangerous rise in blood pressure or even acting as hemolytic agents, while many of the aliphatic amines show little or no effect of this kind and these diamines may cause a serious lowering of the blood pressure.

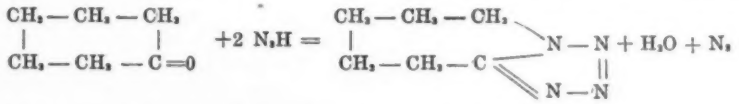
Recently, in study of the physiological action[2] of the imidazol group and various of its derivatives, we were able to show that the imidazol ring in itself is almost without effect if taken internally while its ethylamine derivative (histamine) is approximately 400 times as active.

In this connection we have been interested in the work reported by Schmidt, Hildebrandt and Krehl[3] on tetrazole compounds, and particularly in pentamethylene tetrazole. This peculiar chemical grouping of nitrogen has received but scant attention from the chemist up to the present time and appears to have been neglected by the pharmacologist.

According to Schmidt this particular compound pentamethylene tetrazole is formed by the action of hydrazoic acid (HN_3) on

*Received for publication May 3, 1926.

cyclohexanone according to the following equation:



Cyclohexanone + (excess) Hydrazoic acid = Pentamethylene tetrazole, Water and Nitrogen.

It is a white, crystalline powder, readily soluble in water and the usual organic solvents, producing an entirely neutral solution. It melts at 57° to 58°C. and appears to be a very stable compound.

Physiologically, this compound acts as a circulatory stimulant. Its effect on the isolated normal heart is that of a stimulant with also much the same effect on the respiratory centers. The toxic dose by injection for rabbits is fairly high being 20 to 30 mgs. per Kg. of body weight before toxic reactions are noted. Like all of these compounds, oral medication may be increased to several times this dosage without apparent injury to the heart. It is not cumulative and its effect persists for a half to one and one-half hours after administration[4].

This report on the pharmacologic action of the tetrazole group makes it much more interesting since heretofore this camphor-like action was believed to depend upon a terpene structure or, in other words, to be due to a six carbon ring, an isopropyl and carbonyl group. So, at least, has been the general impression due to the work of Knoevenagel[5], Gottlieb and Schulemann[6] and Wedekind[7]. However, all the compounds developed by these last named experimenters, with perhaps the exception of hexeton of Knoevenagel, were too closely related to the camphor series to overcome the undesirable chemical and physical properties of camphor itself.

Clinical work dealing with this tetrazole compound was done by Krehl[8] at Hidelberg, also Hemmerling[9], of Duesseldorf, who report that they used the preparation in critical conditions such as collapse during pneumonia, typhoid and surgical shock with satisfactory results and cite some distinct advantages in its use over camphor.

This compound pentamethylene tetrazole is now on the market under the name of cardiazol.

We were interested in determining not only the effect of this compound from a pharmacological standpoint but in determining the metabolism of the nitrogen ring in its course through the body. Up to the present, insufficient substance has been fed to animals to determine fully its course in metabolism but a report on the clinical aspect is, in a sense, more important. We desired, in this case, to determine its physiological action after extended oral administration in chronic cases. In a subsequent paper we will report in detail on the fate of this new compound in the animal body.

Case Reports

Case 1.—Mrs. J., aged 47, was suffering from exophthalmic goiter. About twice a week, during the past year and a half, she had had myocardial attacks with pain and dyspnea lasting over an hour. X-ray treatment was given for the goiter, and for a time the administration of digitalis moderated the cardiac attacks. When digitalis finally failed to afford relief, the patient was put on cardiazol, two tablets (3 grains), after meals. Following this the attacks became less frequent, occuring not oftener than once in three or four weeks, and were usually very mild, lasting only about twenty minutes. The pulse rate was reduced from 140 to between 95 and 100. Cardiazol is being continued in reduced dosage and the patient shows progressive improvement.

Case 2.—Mrs. N. complained of cardiac attacks with swelling of the ankles and legs, and dyspnea on exertion. The attacks occurred about once a week and lasted for two days. With the administration of cardiazol, two tablets (3 grains), t. i. d., the number of attacks was reduced to one in three or four weeks; the duration of the attacks was shortened to a few hours, and the swelling of the legs and ankles was markedly diminished. Respiration was much easier, and the pain in the precordial region was relieved. No attacks have occured during the last five weeks. The patient also received diathermy, applied to the chest, during part of the time.

Case 3.—Mrs. C., aged 48, complained of swollen ankles and legs and puffy eyelids during spells that recurred about every three weeks. This history suggested a nephritic condition. Examination of the heart revealed no abnormality. Cardiazol, administered in 1½ grain doses, t. i. d., after meals, obviated the attacks, none having occurred in the seven weeks since this form of medication was instituted. The patient states that she feels very well. In conjunction with this medication, electric treatment was applied under the eyes, and an indicated endocrine treatment was given.

Case 4.—Mrs. S., aged 54, complained of severe headache, dizzy spells and an oppressive sensation around the stomach and heart. The blood pressure was 235 systolic and 168 diastolic. Examination of the heart re-

vealed decided myocardial enlargement. There was also a chronic nephritic condition, apparently without edema. Under treatment with iodine intravenously and cardiazol, one tablet (1½ grains), t. i. d., after meals, the blood pressure was reduced, after two weeks, to 174 systolic and 122 diastolic. The dizziness was practically entirely relieved, and the sensation of oppression in the region of the heart had completely disappeared. Medication with cardiazol in reduced dosage is being continued.

Case 5.—Mrs. L., aged 46, gave a history of thyroid medication in large amounts, which had resulted in myocarditis. She suffered from violent headaches, extreme nervousness and tremors. She was given rest treatment, her diet was regulated and cardiazol was administered in 3 grain doses, t. i. d., after meals. After ten days the dosage was reduced to one tablet, t. i. d., the tablet being crushed in a glass of water before taking. Under this treatment the nervous symptoms and tremors have improved considerably and the headaches have disappeared. In addition to the cardiazol, the patient is continuing with a sedative and an occasional x-ray treatment to reduce the abnormal metabolism.

Case 6.—Mrs. D., aged 42, showed quite a marked myocardial impairment. The heart was enlarged and the pulse was irregular, averaging from 120 to 125 per minute. The blood-pressure was 218 systolic and 150 diastolic. There were frequent fainting spells and dyspnea on exertion. Both legs were decidedly swollen. A diet low in protein and purin was instituted, and rest in bed for a week was prescribed. These measures together with injections of an iodide compound reduced the blood pressure to 170 systolic and there was some improvement in the general well-being, but the dizziness remained, the pulse rate did not decrease, and the swelling did not disappear. After four months of this treatment cardiazol medication was started, one tablet (1½ grains) three times a day, after meals, and one before retiring. Within a week the swelling of the legs had subsided and the pulse rate had decreased to 90. The patient said that she felt stronger generally. After continuing the cardiazol, 1½ grains, t. i. d., for another month, the swelling of the legs had disappeared entirely, the pulse was quite regular at 85 a minute, and the fainting spells no longer occurred.

505 West End Ave.

References

1.—Sherwin: Physiological Reviews, 1922—2—238.
2.—Sherwin and Co-Workers. Unpublished data.
3.—Schmidt, Hidebrandt, and Krehl: *Klin. Wchnschr.* 1925—35.
4.—Lange: *Deutsch. med. Wchnschr.* 1926—7.
5.—Knoevenagel: *Liebigs Ann. d. Chem.* 281—46.
6.—Gottlieb and Schulemann: *Deutsch. med. Wchnschr.* 1923—51.
7.—Wedekind: *Zeitschr. f. angew. Chem.* 1925—38—315.
8.—Hemmerling: *Deutsch. med. Wchnschr.* 1925—39.

WHY is it that when a man does not pay his butcher's, grocer's or baker's bill, Mr. Butcher, Grocer, or Baker sits on his door-step until he gets it, and that when the doctor is owed a bill, months overdue, he contents himself writing letters which the patient usually tears up unopened?

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

[Note: The Seminar is devoted entirely to the practical interests of surgeons. Problems and their discussions are solicited. Contributors must give their names but whenever desired these will not be published. Questions for this department should not exceed fifty words. Address all communications for the Seminar to Dr. G. M. Blech, 108 North State Street, Chicago.]

Surgical Diagnostics (Continued)

As the anamnesis, so the case history. I have heard many capable surgeons express deep regret that they were not given proper training in "case writing," either while students or as internes, because now they are not able adequately to present to the literature really interesting cases. Others, again, refrain from presenting formal papers before medical societies because they feel that the anamnesis alone is not enough and that an array of scientific methods of investigation must be employed to be worthy of possible scientific recognition.

While there is some reason behind this feeling, science cares little for a display of energy beyond the actual needs of the occasion, nor is a surgeon expected to be a novelist or essayist when submitting his ideas.

I feel free to say that valuable material is lost because of the unwarranted dread of being imperfect or incomplete reporters, for, as a matter of fact, most writers are inclined to overdo things, and in this practical age when, in all branches of human endeavor, labor-saving devices supersede traditional forms and amenities, there is only one law which should govern case writing, and that is to be thorough enough to establish the diagnosis and to show a record of what, if anything, was attained therapeutically. Let me make myself clear by an example or two.

When a woman of middle age comes to a surgeon's office with a history of repeated, profuse hemorrhages from the uterus and bimanual examination reveals a large fibroid growth, the surgeon has before him a rather commonplace problem. Let us assume, for the sake of argument, that, for some pathologic reason, this case is interesting enough to be presented to a medical society or to be published in some good medical journal. Would it add to the interest of the case if the surgeon went on for fifteen minutes describing a complete neurological examination? *No!* What we *are* interested in is: Has the past history any bearing on the development of the growth? What were its peculiarities? Were there any contraindications to operative therapy? Was an operation performed, and, if so, with what result? Or, if there was no operation, what methods were used and how was their effectiveness demonstrated?

On the other hand, if a surgeon encounters a case of tumor of the brain, in a woman, her sexual history would have hardly any bearing on the case, but absence of her neurologic symptomatology and findings and of the ocular examinations and investigations of the cerebrospinal fluid would be like the play of Hamlet without the Prince of Denmark.

Here is a reasonable scheme to be followed: Note the name, address, age, occupation and social condition of patient; previous diseases, familial history; location, character, duration and development of the affections, and their probable causes.

Physical Examination

Inspection. No two physicians inspect a patient alike or equally well. Some "inspect" and do not inspect at all, even if they look intently. I recall having reviewed a large book on surgical inspection and palpation by an eminent French author and I marveled at the thoroughness and the importance of inspection as a means of arriving at a diagnosis. It is palpably impossible here to do more than to point out the salient features.

Inspection is a serious business insofar as it must do for the surgeon what a photographic camera does for the man trying to preserve the characteristics of an interesting landscape at sunset. The surgeon who "looks" at a swelled right knee and thinks he has finished with that part of the physical examination, has gained little. A competent inspection requires mental concentration—the expenditure of time and energy. A keen observer would not be satisfied with a mere glance confirming the presence of a swelling. He would study that swelling as a sculptor studies a figure to be reproduced, noting all contours, sizes, diameters, etc.

The surgeon has to go even farther than that, for he often encounters minor deviations which may escape ordinary inspection. The knee must be *studied* with the eyes by looking at it from the front, sides and rear; by comparing it with the healthy knee of the other limb or, if both are affected, by comparing the two knees with each other as regards extent and character of the swelling, and with average normal knees of individuals of the same size. The eye must tell the surgeon whether there are unusual colors, and these, in turn, must be studied with a view of determining their cause.

An arm shows a red discoloration. What is it? The examiner puts his finger on it. He notes that the discoloration disappears almost immediately and he knows that the color is not due to anomalous pigmentation but to hyperemia. In all localized hyperemias the question suggests itself whether they are due to filling of the capillary vessels by inflammatory processes or to vascular new formations. The study of the color will prove helpful, since there is a difference between the bright red of the *naevi vasculosi* and the bluish redness of a venous cavernoma. And here, too, the pressing finger will aid in the differentiation, for the color disappears in the former easily while in the latter it cannot be perfectly displaced.

A venous hyperemia is recognized, in hemorrhoids, in varicocele and in varicosities of the extremities, as due to dilatation of the veins, leading to bluish discoloration, often assuming a cyanotic hue.

The surgeon's eye alone will suffice to recognize the evenly-distributed, inflammatory red of erysipelas and the unevenly-distributed, bluish-red of pus infection of cellular tissue, as in a typical phlegmon of the arm, and a sort of mixture of the two. The eye, almost at a glance, tells a vivid story in inflammation of the lymph vessels, characterized by reddish stripes.

The human skin is subject to all sorts of anomalies in pigmentation which, not infrequently, have surgical significance. Scars, syphilis, burns, irritations (chemical as well as thermic), nevi, etc., are often recognized without difficulty. The icteric discoloration is so characteristic as to immediately direct attention to the biliary apparatus. Of greater import are the discolorations which are perhaps best classified as gangrene. Arteriosclerosis, injury to the tissues, embolism, frostbite or burns are causative factors which come to the surgeon almost intuitively, without reference to "reminders," as the subclassification into dry and moist gangrene, will, in the event of the latter, drive the surgeon to look for diabetes and its rational treatment before resorting to the knife.

(*To be continued*)

PROBLEM No. 5
Discussion and Solution

Recapitulation. A woman 35 years of age has previously had two forceps deliveries and is being attended by a midwife in her third confinement. You are called in hurriedly because the bag of waters is supposed to have ruptured and the cord to be "outside."

Examination shows that after weak labor pains for the past thirteen hours the pains now come about every seven minutes. The patient's condition is apparently good, with a temperature of 99°F. and a pulse of 100. The vagina is patulous, the pubic arch shows an obtuse angle and the measurements reveal a flat-rachitic pelvis with a well excavated sacrum. The os permits spreading of the examining fingers without resistance. The bag of waters has ruptured an hour ago. The vagina contains several loops of the umbilical cord with slow pulsation. The fetal head is movable above the pelvic introitus.

The requirements are: Can the woman be delivered at once? Give preparatory measures and method of delivery. (See June CLINICAL MEDICINE, pp. 415-6.)

Discussion by Brigadier General George Acheson, St. Martins, N. B., Canada

The child is alive, the os dilated, the membranes ruptured, the pains regular with vertex presentation, therefore this woman can and should be delivered at once.

With as complete aseptic precautions as possible the prolapsed cord should be pushed up digitally as high as may be through the dilated os, and external pressure made over the fundus, so as to occlude the uterine opening into the vagina by pressure of the presenting vertex. This may be kept up by a firm abdominal binder.

High forceps should be applied, and rapid delivery accomplished, providing the child remains alive—a condition which should be determined by auscultation of the fetal heart. Particularly should rapid delivery be attempted when it is not possible to keep the prolapsed cord within the uterine cavity. If the forceps cannot be satisfactorily adjusted, podalic version should be performed, but forceps delivery is preferable.

As this woman has been twice delivered per vaginam, Cesarean section is scarcely to be considered.

In case of death of the fetus before delivery, there is no need for hurry, and the case may be left for nature to empty the uterus.

Discussion by Dr. Isaac E. Crack, Hamilton, Ont., Canada

I believe the woman can and should be delivered at once in an effort to save the child. She has been delivered on two occasions by forceps and must therefore have a fair amount of room in her pelvis.

I would scrub her up thoroughly and give her an antiseptic vaginal douche (preferably lysol), as she has been in the hands of a midwife. An assistant to give a good ether anesthesia should be obtained in the meantime, if possible. After emptying the bladder and under surgical anesthesia, I would attempt internal version, by which method I feel that the patient could be delivered.

Dr. Isaac E. Crack

Editorial Comment

The scarcity of discussions of the above practical problem, which I selected in the interest of our readers rather than as a matter of personal inclination, would indicate lack of interest, were it not for the fact that I have in my possession a number of letters expressing appreciation of the problem and at the same time the fear that any discussion may prove incorrect.

I really owe a debt of gratitude to the two Canadian collaborators who have fearlessly expressed their opinions, and whether we agree or disagree with them is of no importance, because this is an open forum where we exchange our ideas, so that we all must benefit.

While I have announced the solution of the above problem, I want you to consider the following free comment as a discussion rather than an absolute solution. It will be recalled that I asked in the "requirements" to give the *reason* for any decision.

We can all agree that, in a multipara with perfectly dilated os and a fetus still movable in the uterus, we have the ideal condition for version and extraction. To make sure of these conditions it is first necessary to be sure about the width of the os. I said in the problem that spreading the examining fingers meets with no resistance. Of course, that was a very crude description but purposely so, for I gave a case as I saw it and it was *my* fingers that were the measure. Each examiner can easily find out by actual measurement how far his fingers spread and if these fingers stretch the margin of the os, without resistance, one knows that to all practical purposes dilatation is complete enough so that there is no danger that the head will remain hanging in the os.

If there had been some resistance to the spreading of the examining fingers, we know that dilatation was not complete and the thing to do under such circumstances is to investigate whether the os is dilatable enough not to present difficulties to the passing head.

If the os cannot be dilated sufficiently (Scars!) to insure free passage of the head, and as there is some danger in the presence of prolapse of the cord, I feel sure the proper thing to do is to incise the os.

Let us assume that twenty minutes elapse between the arrival of the obstetrician—I refer to private residences, as given in the problem, and not to hospital practice—until some definite operative procedure can be carried out. Time enough for the fetus to die, unless measures are taken to free the cord from compression.

I think that the best plan is, first, to displace the fetal head from the pelvic introitus by pushing it towards the left ilium (or right, depending on the position of the child) and placing the mother on the op-

posite side—really that side on which the cord is prolapsed. When there is a large loop or loops of cord in the vagina, freeing it in its entirety is out of the question, but what we can attain is to free the cord from compression in the pelvic introitus by directing labor contractions towards the hollow of one ilium.

If the head cannot be pushed as described—and this is particularly difficult in primiparae—and presents itself at the pelvic introitus with every labor pain, we must hold it back so that it cannot compress the cord, always remembering that, in the intervals, we can keep back the head by squeezing our flat hand from above the symphysis between the head and the pelvis; a purely external manipulation, which is, however, inadequate during pains, when the surgeon's fingers must accomplish the feat from within the vagina. High pelvic posture relieves the strain on the surgeon's hand somewhat.

The midwife could have been directed to disinfect her hands and relieve the surgeon's hand, enabling him to complete antiseptic preparations and proceed to do version.

No attention should or need be paid to the cord. The left hand passes the fetal head to the breech and thence along the right thigh to the right foot, which is grasped and pulled. One can perform version leisurely but, once extraction of the fetus is begun, the job must be finished quickly, for extraction causes compression of the cord. With the patient in Walcher's position a little narrowing of the pelvis is of no particular moment.

To prevent any misunderstanding let us assume that the pains which have caused rupture of the bag of waters and prolapse of the cord have also pushed down the head sufficiently to make version impossible. General Acheson's advice, to apply forceps, is absolutely life-saving. We will be lucky indeed if we can wash our hands with a little alcohol, for there is no time left for boiling instruments, donning gloves and the like. We disinfect the best we can, chemically, as that is better than nothing.

One such case is lesson enough to cause any practitioner to have his obstetric kit sterile at all times; that is to say, sterilized *after each use* and preserved in sterile containers which are secured against contamination.

(Note: Other obstetric problems will be published only if a number of readers demand them.)

Case Report by Dr. W. D. Lane, Bad Axe, Mich.

The patient, a trained nurse, 24 years of age, presents the following history:

Marked constipation since her eighteenth year. At fifteen she had scarlatinal nephritis. Her menstruation has always been regular but accompanied by severe abdominal pain, nausea and occasional vomiting, all of which became rather worse during the past six months. Influenza last January. In March an attack of dysentery lasted fifteen hours, concurrently with her menstruation, which was unusually severe with reference to pain and nausea.

Her parents are living and well. Six brothers are living and well and one is dead, due to peritonitis produced by a ruptured appendix. One sister living and well. Her sisters and all but one brother had had appendicitis and had been operated upon.

Present History. The patient awoke at 7 a. m. with cramps, nausea and several loose bowel movements which gave her some relief. She vomited once only. As the patient was menstruating at that time she ascribed the symptoms to her periods. At nine in the morning she went on duty but two hours later cramps and general ill feeling compelled her to abandon work. I saw her at noon and at 10 p. m., and on both occasions the patient claimed to feel better, hoping to return to duty the next day.

A thorough *abdominal examination* proved negative for the detection of acute condition. Vaginal and rectal examination revealed tenderness around the left ovary. The right side was free. Menstruation had stopped.

The patient was seen the following morning at eight, and said that her pains had become worse an hour before and that she had vomited several times, but had been comfortable during the night.

Examination revealed some tenderness over left, lower abdominal quadrant and some rigidity extending over this area to the mid-abdominal line but no higher than 10 centimeters above the symphysis. The right side was negative. The vaginal examination showed the same conditions as the preceding one, except that the cervix was tender on palpation and edematous.

Suspecting the possibility of an acute condition due to a twisted ovarian cyst I advised immediate consultation and operation. The consultant verified the above-mentioned findings, but suggested also the possibility of a diverticulitis of the sigmoid.

At this time pulse and temperature were normal and the blood showed 10,000 leucocytes.

Immediate laparotomy revealed an abdomen filled with pus. The ruptured appendix was found at about the midline of the abdomen, extending to the left side of the uterus and free, but the cecum was adherent to the uterus. We removed the appendix but left everything else alone and closed the abdomen with adequate drainage.

The course was uneventful for about two weeks, when the patient complained of pain in her left chest. Aspiration removed about three ounces of pus. This was followed by a rib resection. In spite of all care the patient died two weeks later from what I diagnosed as septicemia.

This case caused me great worry and self-criticism. I am greatly impressed with the fact that no case of appendicitis is safe 24 hours after its onset. Here we have a case with rupture of a suppurating appendix in less than 24 hours, without any of the classic symptoms indicating the gravity of the case. Even the leucocyte count was low. Other physicians had repeatedly examined this patient before I ever saw her, and yet no one had had reason to suspect appendicitis. Had it not been for the misleading menstrual history and her menstruation the day she was taken sick I, doubtless, would have suspected an acute surgical condition and would have opened the abdomen on general principles.

(Note: Dr. Lane invites critical discussion of the above case. I am sure that he has given us an interesting case and has presented it in a most interesting manner. The case is open for discussion. I may be permitted to say that Dr. Lane merits a good deal of praise for the way he managed the case. All self-censures are typical of earnest minds who take their serious responsibilities as a matter of sacred duty, but in criticising one's diagnosis or therapy, simply because of a fatal issue, we are apt to lose perspective and see black when there is no occasion for it. I have gone through all of that and I can heartily sympathize with the author. Now let us have a free discussion.—ED. SEMINAR.)

PROBLEM No. 7

A bookseller, aged 32, married, father of three healthy children, without any familial or previous history that may have a bearing on the present trouble, developed, in the midst of perfect health, the following clinical picture:

The patient suffered from chills and soon after noticed a swelling behind the right ear, which proved very painful. He also had some difficulty in swallowing. On physical examination, soon after the beginning of the attack, it was noticed that the swelling was over the right parotid, hard to the feel, yet an acute inflammatory process, as evidenced by an adema extending from the forehead down the neck to the clavicle. The most prominent part of the swelling was over the angle of the lower jaw. The patient was unable to swallow even liquids without pain. Examination of the throat, however, revealed nothing abnormal, nor was any abnormality found in the other organs of the body. The temperature was 103°F.; pulse 90; respiration 24. The patient made the impression of being a very sick man, and was greatly annoyed by the increased flow of saliva.

Requirement: Diagnosis and differential diagnosis. Prognosis and immediate therapy.

ERROR No. 4

The patient concerned was a man about 30 years old, a mining engineer, who complained of slight dysuria and an annoying hyperesthesia in the perineal region. He has had two attacks of acute gonorrhea which he himself treated with injections of permanganate of potassium solutions.

The first attack subsided in about three weeks, the second, which occurred over a year ago, lasted about three months and, while the discharge stopped, the above-described annoying symptoms persisted. He had occasionally a "morning drop."

A physician to whom he applied for advice found that the shreds in the urine still contained gonococci, but a large metal urethral sound could be passed into the bladder without any difficulty. On rectal examination the physician noticed several small, hard tumors which seemed to be immediately beneath the rectal mucosa but attached to the prostate, which appeared to the examiner to be slightly tender to touch and slightly enlarged. He could not map out the seminal vesicles. The physician pronounced the growths to be adenomata and recommended prostatectomy through the perineal route.

On examination by *you* the above findings are confirmed. The finger in the rectum easily detects the presence of the small growths, which give to the examiner the feel of medium sized bird shot imbedded close to the posterior surface of the prostate. The prostate itself is somewhat tender

to touch but cannot be mapped out as regards its size.

Requirement: Criticism of the diagnosis and proposed treatment, if any.

Query: Autohemic Therapy in Furunculosis

Dr. L. M.—Tenn. The foreign literature mentions injecting the patient's own blood as a barrier against the spread of infections of the face and neck. I am treating a case of furunculosis of the neck which resembles, and perhaps is, a carbuncle. I wonder whether it will be safe to try to inject the patient's blood all around the site of the pus infection.

Reply. No! The procedure is too recent and too uncertain in the reported results to merit employment at this time, especially since it is not free from certain risks. German and Austrian surgeons of note have not warmed up to this scheme, and I have not had the courage to try out the method, even though I treated a carbuncle of the neck in my own family. While I am a staunch adherent of conservative methods in surgery, I am convinced that in your case the best and safest procedure is to excise the entire area into healthy tissue, provided the operation has been preceded by a urinary analysis for sugar, acetone and diacetic acid; and provided, further, that, in the presence of any of these abnormal constituents, insulin has been injected as a preparatory measure.

The procedure is classic and effective and so simple that any general practitioner should be able to perform the small operation under local anesthesia. As for healing, all one has to do is to put on a protective sterile dressing and leave the rest to nature. The scar or scars will be almost as inconspicuous as if the wound had healed by primary intention.

Asepsis and Rest

ASEPSIS is the first essential condition of successful surgery; the second is rest.

There are two kinds of rest, mechanical and physiological. Without asepsis there can be no complete physiological rest.

The securing of mechanical rest depends on the skill, ingenuity, and experience of the surgeon.

Physiological rest can be secured only by mechanical rest plus the exclusion of pathogenic bacteria from the wounded tissues—this we aim to accomplish by aseptic technic, and gentleness and care in handling tissues at operation.

—Bernays: "Golden Rules of Surgery."

Clinical Notes and Practical Suggestions

The Abuse of Ultraviolet Therapy, and Some of Its Better Uses

THE writer has been constrained to write this brief paper on account of his observation, as time goes on, of the tendency of us all to fall into that most common rut of using a valuable therapeutic measure in so many conditions, many of them where, perhaps, it is contraindicated, that the results obtained are comparatively negligible, and there is developed, consequently, a discouraging attitude towards this method of treatment, and a gradual discarding of it, to the detriment both of the patient and the physician. This is what is at present happening in the field of ultraviolet therapy.

The blame for this condition lies not alone in the hands of the physician, but in all probability is due to overeagerness for the relief of some obstinate condition, together with the overzeal of writers of papers and manufacturers of apparatus who appreciate this valuable therapeutic measure and, in their eagerness, forget paramount issues. I propose here to mention, in a general way, some of the most common conditions in which it is of no value, and some in which it is worth while using.

In the first place, it must be understood that ultraviolet energy is of comparatively little value in any condition which is under the skin. One must take this statement guardedly for the reason that we do know that rachitis and tuberculous glands are benefited by this treatment. However, in the main, this is a correct statement, the two previously mentioned conditions probably being benefited by the fact that the ray stimulates calcium deposits in the bones, and that it does not favor the growth or fostering of the tubercle bacillus.

Secondly, it must be appreciated that the ultraviolet ray is not a specific in any way for any condition, and that it may not even benefit all cases of a disease for which it is supposed to be almost a specific; e.g., it may cure one case of acne, where it will do the next case no good whatsoever.

I believe that I may say with little fear of contradiction that the following conditions are in no way benefited by this form of therapy: alcoholism, large and comparatively deep angiomata, anthrax, appendicitis, arteriosclerosis, autointoxication, burns, bunions, carcinoma, canities, chloasma, colitis, constipation, cysts, diabetes mellitus, peptic ulcers, dyspepsia, dysentery, enuresis, goiter, hay fever, hepatitis, keloid, ovaritis, acute osteomyelitis, otitis media, tetanus, and hypochondriasis.

It is of problematical benefit in the following conditions: benign peptic ulcers, abscess, amenorrhea, anemia, ankylosis, arthritis, asthma, bronchitis, bursitis, catarrh, chorea, dysmenorrhea, empyema, epididymitis, erysipelas, erythema induratum, erythema multiforme, erythema nodosum, felon, fractures, gout, wounds, hemorrhoids, herpes zoster, the psychoneuroses, ichthyosis, anterior poliomyelitis, influenza, pneumonia, leucorrhea, leukoderma, lichen, lumbago, ozena, cellulitis, pharyngitis, laryngitis, pityriasis rosea, pyorrhea, ringworm, sciatica, trench mouth, and teliangectasis.

It is of relatively great value in a majority of the cases of the following conditions: acne in all forms; all forms of infection of the skin by pyogenic organisms; some cases of dermatitis venenata; sterilizing diphtheria carriers; some forms of eczema; alopecia, especially the areate type, the premature type not giving as good results; tuberculous adenitis; some cases of urticaria; impetigo; lupus; marasmus; rachitis; old suppurating wounds and ulcers; mumps; myositis; nerve disturbances; psoriasis; pruritus of all types; ringworm of all types; seborrhea; sycosis vulgaris; tonsillitis, and x-ray dermatitis.

Inasmuch as the exact method of action which makes it of value is as yet unknown, it may be that this ray may be of even greater value than we at present appreciate. But with our present knowledge of

it, I believe that we should be cautious in its use; not because it in itself can cause much harm by the actual exposure of a part for which it can do no good, but because, in expecting too much of this, we may neglect to give the patient the proper treatment for a condition which may well have a fatal outcome.

JACOB SPITZ,

Boston, Mass.

HYPOTHYROIDISM IN PREGNANCY*

It is important to determine the basal metabolic rate of all pregnant women, because it is thus possible, in many cases, to make an early diagnosis of hypothyroidism.

During pregnancy (and frequently during the menstrual period) the basal metabolic rate rises from 20 to 25 points. If this rise does not occur it is highly probable that the mother is suffering from hypothyroidism and will give birth to a hypogonad baby which will be unduly large—8 to 12 pounds

If the hypothyroid mother is given, during her pregnancy, enough thyroid substance to raise her B.M. rate to the proper point and keep it there the baby will almost always be of normal size and not a hypogonad.

An interesting problem for some one to work out will be to determine what relation, if any, the B.M. rate bears to the menstrual disturbances of young girls, and whether thyroid feeding will ameliorate the symptoms when the metabolic rate is found to be below normal.

G. B. L.

ECHINACOID IN RATTLESNAKE BITES

During the past ninety days, in the district surrounding Schertz, Texas, I have been an interested onlooker in three cases of rattlesnake bites.

Case 1.—A Mexican, twenty years of age, was bitten on the second finger of the left hand. In treating this case the wound was scarified to some extent, and 10 grains of echinacoid, made into the consistency of a soft ointment, with water, was applied over the whole injured surface and this covered with a gauze bandage. Internally, one grain of echinacoid was administered every hour. At the end of forty-eight hours it was evident that the virulence of the poison had been destroyed.

At the point of the bite on the finger there had been some swelling and this sloughed some days later, but finally healed, leaving the finger as it was before the accident.

Case 2.—A Mexican boy, bitten on the leg. In this case, the wound was not scarified but a cup was used while the medicine was being prepared for application. The cup extracted about three ounces of venous blood. The drug was applied and bandaged and 1 grain of the echinacoid ordered to be taken every hour. The case recovered in less than one week.

Case 3.—A Mexican man, aged forty-five, bitten on the left foot; same treatment as in case 2, and discharged cured at the end of one week.

W. T. THACKERAY,

Fowlerton, Texas.

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[In Case 1, there is no history of sucking of the wound, so it looks as if the echinacoid deserves full credit. In the other two cases the cupping may have been partly responsible for the cures.

Nothing is said about the application of a torniquet proximal to the wound, but this is a valuable measure, if done early, to prevent the dissemination of the poison.—ED.]

THE DECOMPENSATING HEART IN ADULT LIFE

When one approaches a cardiac case in the adult it is wise to make a preliminary estimate of what the cardiac condition is. In the main, adults suffer with rheumatic hearts, syphilitic hearts, nephritic, arteriosclerotic or thyroid hearts. It is not difficult, upon looking at a person, to come to some conclusion as to which of the five groups the patient belongs to.

It is very easy to pick the syphilitic heart in the average patient. It occurs, as a rule, in persons of fifty or thereabouts, and if such a patient comes in with no signs of decompensation and a history of nothing ever having happened before, one should think of a syphilitic heart.

The nephritic heart is usually associated with high blood pressure. The arteriosclerotic is degenerative rather than inflammatory.

The rheumatic heart usually occurs in younger individuals, those from twenty to thirty, for many of these patients acquire their trouble in early adult life or childhood.

It is not difficult to recognize at a glance, in the great majority of cases, the thyroid heart. There is always nervousness, the appearance of being driven by some inward force to restless activity, which is easily recognized. A few questions as to tremor,

*Remarks by Dr. Wm. Engelbach, of St. Louis, speaking before the Association for the Study of the Internal Secretions at Dallas, Tex., April, 1926.

tachycardia and loss of weight, and one can make the diagnosis readily.

If there is any doubt as to the character of the heart, as between the arteriosclerotic and nephritic, the question of rising at night is of assistance. If nocturia exceeds diuria one knows at once that there is kidney disease.

In picking out a decompensated heart one must have in mind these five fundamental divisions into which the heart cases may be split. The age at which these different hearts show their beginning decompensation is very important in the diagnosis. The rheumatic heart develops symptoms early, the arteriosclerotic heart late; the syphilitic heart from forty-five to fifty five, the nephritic usually between forty and fifty, sometimes in the sixties.

In the early studies of the heart the attention was largely taken up with hair-splitting differentiations of murmurs and sounds. It was forgotten that the organ is really a bunch of muscles, and that the great thing is the muscular power and heart tone. The decompensated heart is one in which the muscle of the heart is growing weak.

In decompensation there are certain circumstances that must be kept in mind. One is that a heart may very gradually decompensate, and that it may very suddenly decompensate. The decompensated hearts of sudden origin are, as a rule, hearts which cannot be aided. Coronary thrombosis, embolus or mural thrombosis in the heart wall cannot be foreseen, for they do not carry with them the evidences of decompensation.

Gradual decompensation is betrayed by symptoms and physical signs. One of the earliest signs of a failing heart muscle, which may last for a long time and produce no serious disturbance, is *dyspnea*. This is really due to a disturbance of the elasticity of the air cells of the lung. If an individual has a slight amount of hyperemia of the individual cells in the walls of the lung he will have expiratory dyspnea and some inspiratory dyspnea. This occurs early and is an evidence of failure of the myocardium on the right side of the heart. It is betrayed by walking up a slight incline, or walking against the wind. If one could take the blood pressure of the pulmonary artery as one can of the brachial, it would be possible to get ahead of many cases of decompensation. In addition to the dyspnea there is a slight amount of cyanosis, and if the lips are a little blue one does not need to wait for a definite break to prove a decompensated heart.

Swelling of the feet and ankles is another prominent symptom. This is usually slight, occurs at the end of a day, and is due to the fact that there is a little localized acidosis of the protoplasm of the cells of the feet. They do not always pit but they represent early disturbance, and this sometimes exists for ten or fifteen years before an actual break occurs.

A frequent, unproductive cough is an example of disturbance of the pulmonary artery. It may be a little suggestive of the brassy cough of aneurysm. It is dry, occurs in the morning and at night when the body changes position, and should always be inquired into. A history of nose-bleed is important and is often the first sign of a break in a nephritic heart.

Among the important physical signs is loss of weight. There is likewise loss of blood and of hemoglobin. There is cardiac anemia early.

Taking the blood pressure is very important, for one can pick up the disturbances of the myocardium by the inequality of the systolic blood pressure. Following upon this, sometimes closely, sometimes after a period of time, is a variation in the rhythm. The diastolic pressure is more important that the systolic. It is always high in the nephritic heart, from 120 to 140. If the diastolic pressure is low and the systolic high there is usually a good deal of throbbing. If the systolic and diastolic are close together no throbbing is present. In the thyroid cases there is often a great deal of throbbing. If there is a very low pulse pressure, 20 to 30 points, the myocardium is not as it should be, for there should be a spread of 50 points between the diastolic and systolic. The blood pressure is a matter of very grave importance in the examination of the patient. If the systolic pressure falls within a short time it is a danger sign, an evidence of decompensation which may be grave.

The examination of the heart is very important. Percussion is sometimes disappointing because there is so often emphysema. The skiagraph is of great value when properly taken. The heart tones are important. A sign which is a favorite with me is the reversal of the sound at the apex. With this reversal of accentuation at the

apex it is evident that there is some disturbance with the myocardium, and if there is no reason for this, in the way of overlapping lung, the evidence of myocardial involvement is clear. I do not consider murmurs as of much importance, with the exception of the mitral murmur which often occurs early in the nephritic and syphilitic hearts and means that the heart is beginning to spread a little and bring about a leak at the mitral valve. Pulsating neck vessels are important and not infrequently indicate a thyroid heart, or pericarditis.

Evidences of decompensation are often shown in the liver and kidneys. Ascites is an important sign that is often overlooked. There may be hydrothorax, which is overlooked because it is not thought of. Albumin and red blood cells in the urine, as an indication of passive hyperemia, are important, and one can tell by the urinary output whether the heart is doing well.

In general, by paying attention to the age of the individual, differentiating the five different types of heart disease and paying some attention to the little symptoms of impending distress of the myocardium, one does not need to pay so much attention to the signs. The decompensated heart is often of normal outline.

Hearts should first be looked at from the broad, rough way, and then attention paid to signs of disturbance or distress on the part of the myocardium rather than to murmurs.

CHARLES LOUIS MIX,

From *Bul. Chicago M. S.*

ORTHOPEDIST

The word, orthopedist, comes from two Greek words: σ p θ ό ς (orthos), meaning straight, and π α i s (pais), meaning child—therefore, one who straightens the bodies and limbs of children.

There seems to be a widely held idea that the latter half of the word comes from the Latin word *pes* or *ped*, meaning foot. This is an erroneous derivation.—ED.

HOT SPRINGS, ARK.

They told me that Hot Springs is a very beautiful place, so I went to see this National Park in the foothills of the picturesque Ozarks; one of nature's sanctuaries providing a retreat where one may rest from his labors and revel in relaxation.

Nestling snugly in the somnolent valley between three ever-green mountains, Hot Springs welcomes all to rest and indulge in the solace of happy dreams. Day succeeds day as fancy suggests with no compelling rush that demands or drives. The air itself has a soft touch, almost a caress, so soothing and quiet that anxieties and worries fade away.

At such an internationally known spa as is Hot Springs many incurable diseases appear searching for the fountain of youth. Some of these may even be made worse by the baths and treatment. It is therefore with much interest that I learned from Joseph Bolton, Superintendent of the United States Reservation here, that he advises all those who do not first seek a local physician's care that:

1.—The Hot Springs water is not a "cure all" but has certain effects on the human body which are most beneficial when properly applied.

2.—The Hot Springs water is not used like the hot water of other resorts, where a mechanical effect is sought through the practice of hydrotherapy.

3.—A bath beneficial for a person with high blood pressure may be quite dangerous for one whose blood pressure is below normal.

4.—The effects of the Hot Springs water on old tuberculous lesions may make them active again. Tuberculous persons should not bathe in this water.

5.—"Rheumatism" or neuritis is an evidence of focal infection. You should find and remove the original focus before expecting the impossible from the water alone.

6.—You would not be justified in doubling the amount of medicine your physician would prescribe, therefore you should not attempt more than one bath a day, as each bath causes a reaction (shown by fever) and your system requires time to recover and be benefited by that fever or reaction.

7.—The hot water alone does not cause constipation, but lack of usual exercise, overeating, change of diet, loss of fluids through perspiration, etc., may.

8.—Certain diseases of the heart will be aggravated by the baths but there are many abnormal conditions of the heart that may be greatly benefited.

9.—Bathing immediately after eating is dangerous as the stomach requires a large amount of blood to take care of the digestive process. When you get in the hot water this blood supply is diverted to other

parts of the body, thus seriously interfering with the digestion of that meal.

10.—Bath attendants are not allowed to prescribe your bath. An average bath for healthy persons has been outlined for them and they are not permitted to exceed that limit.

In character and action these forty-four hot springs are practically alike. The source of the heat is believed to be great masses of igneous rock intruded in the earth's crust by volcanic agencies. Deep-seated waters converted into vapors by contact with the heated mass probably ascend through fissures toward the surface where they meet cold springs which are heated by the vapors.

The waters of the Hot Springs were analyzed by J. K. Haywood in 1901, and the complete results published in the publication entitled "Analyses of the Waters of the Hot Springs of Arkansas," which may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 10 cents. The hot waters are practically alike in concentration and compositions and range in temperature from 102° to 147°F., most of them having a temperature of 135° to 145°F.

The baths create a reaction accompanied by an elevation of the body temperature, accelerated heart action with diminished blood pressure in the arteries, and a stimulation of the nutritive changes in the tissue cells, especially those composing the organs of elimination and those concerned in the formation of the blood. Just why this reaction occurs has not been definitely determined, but it does occur regularly.

To actual thousands Hot Springs is a home for a time each year and this perennial lure of the soft air, sparkling sunshine and salubrious climate creates the subtle charm of this picturesque Ozark valley. Many of its hotels are built on the generous rambling patterns of resorts a generation ago and although accommodations to suit all purses may be found, the man with a fat bank roll will not have difficulty in finding appointments of sumptuous comfort and good taste.

The mountains are of granite with outcroppings of vacalite, from which whet stones are made with which to sharpen knives, and brown and white sand stone. The greatest grouping of the springs is found on the mountain called Hot Springs Mountain, but others are found everywhere along the road.

For more than 25 years the Government has been building roads and trails and now bridle paths skirt the rim of these lovely hills and offer the horseman his choice of a canter in any direction or an early morning constitutional around the well-kept drives of the reservation. Excellent highways afford motor trips through a country abounding in inspiring panoramas.

The pine, oak, maple and sweet gum trees with which these hills are covered fill the air with balsam fragrance, and, as one climbs over the crests, the valleys below are in a haze. As the village lies snugly in the valley the air currents that sweep over the mountains are tempered so that although at an altitude of nearly a thousand feet above the sea light wraps only are necessary.

People with all sorts of ailments flock to this spa seeking physical benefit from these waters. Some are crippled with disease, some with old age, others just plain homely mugs, and quite a number like myself troubled with inherent inertia, and we all expect to find the fountain of youth, health and beauty.

CHARLES J. DRUECK,

Chicago, Ill.

MARRIAGE AND LONGEVITY

Many a wag has asked the question of the unsuspecting: "Why do married men live longer?" "They don't," says the wise lady of the household, "it only seems longer."

Now, the joker in the situation is this: They do! It goes to prove again that many a truth is discovered in jest.

Here are a few interesting facts from the Chicago Department of Health figures for 1925. For each age period of life, married men have lower death rates than single, widowed or divorced men.

1.—Out of every 1,000 divorced men, between the ages of 25 and 34, fifteen die; out of every 1,000 single men in the same group age, five die; while out of 1,000 married men in the same group age only four die.

2.—Out of every 1,000 divorced men between the ages of 35 and 44, eighteen die; out of 1,000 single men of the same group age, fourteen die; while out of 1,000 married men of the same group age only seven die.

3.—Out of every 1,000 divorced men, between the ages of 45 and 54, thirty-seven die; out of 1,000 single men in the same age group, twenty-three die; while out of

1,000 married men in the same group age only fourteen die.

4.—Out of every 1,000 divorced men between the ages of 55 and 64, at a period when life is beginning to be good, we find fifty-six die; out of 1,000 bachelors in the same age group, forty-nine die; while out of 1,000 married men in the same age group only twenty-nine die.

5.—It seems that marriage is certainly good for the health when we consider the young fellows of 65 and over. Out of 1,000 of these divorced boys, 116 play harps in heaven; out of 1,000 single fellows of the same age group, 112 enter the angelic host; while out of 1,000 married youngsters of the same age group only eighty, with "storm and strife" to contend with, knock at St. Peter's Pearly Gates.

The lower the death rate the longer you live. In 1925 there were over 41,000 marriages while divorces reached over 8,700; that is, for every thousand marriages there were about 200 divorces, making marriage 80 percent safe. In the same period of time, for 1,000 men of marriageable age, 29 deaths occurred among the divorced, while 13, or less than one-half as many deaths, occurred among the married, making single-blessedness 50 percent unsafe.

If you want to live longer, get yourself married and stay married—permanently.—DR. H. N. BUNDESEN, in *Chicago's Health*.

NEW METHOD FOR SPRAYING WAX IN BURN CASES

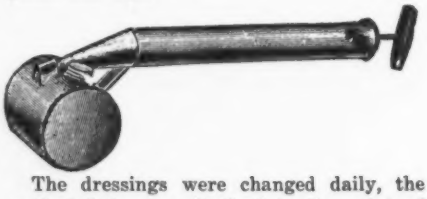
On August 26, 1925, a man dropped a large bottle of alcohol-glycerin soldering flux, causing the contents to spill over his clothing. This incident occurred near a gas burner, from which the flux ignited, enveloping him in flames which were extinguished only after most of his clothing had been entirely consumed.

Examination showed a well-developed, well-nourished white male, age 19, with a second degree burn extending from the right shoulder down to the hand; third degree burn on dorsum of right hand, on the right leg, extending from the iliac crest to the right foot, and on the left leg from femoral condyles to left foot. Over the tibiæ of both right and left legs, and over both malleoli of right ankle the burn was sufficiently deep to involve the periosteum, which appeared scorched. Pulse 120, fair volume. Patient apparently going into shock. Given morphine sulphate, gr. ¼, hypodermically, and removed to hospital.

Procedure: In the hospital he was given an ether anesthetic, and debriement was done with soap and water, using a stiff scrub brush. The burned surfaces were covered with ointment.

Within 24 hours it became apparent that he was experiencing a dangerous split-protein toxemia, his temperature running between 103° and 105°F.; urine showing albumin and many granular casts.

I decided at this point to use a spray atomizer and cover the denuded areas with wax, in an endeavor to arrest absorption from his burns. I obtained some parresine and a wax spray-atomizer, made for the purpose of spraying the wax. Inasmuch as it was necessary to give the patient an ether anesthetic in order to change his dressings, we had to work fast and could not spend two or more hours daily trying to cover this extensive area with the apparatus at hand. I therefore purchased a tin insect spray at a local hardware store, filled the spray with molten wax, and discovered that the entire areas could be covered with a heavy coat of wax in about 15 minutes. In use, the spray was held at a distance of about 12 inches from the area to be treated, which was then covered with parresine lace mesh gauze and the dressing completed with gauze bandage.



The dressings were changed daily, the patient being anesthetized to the point of light surgical anesthesia for the purpose.

A definite change was noted within two days after the spray method had been started. His temperature fell to 100°F., his urine cleared up, and he began to take an interest in his surroundings. He was removed to his home on the 65th day, where treatment was continued. Most of the areas healed promptly, except those over the tibia and malleoli, which were very slow in closing over. At present, he is employed as a soda-fountain clerk, working 12 hours daily. He has no contracture or deformity from scar formation.

Conclusions (From this, and subsequent burn cases treated in like manner):

1.—That spraying the burned areas with wax was preferable to painting them with

a camel's hair brush, and that with an apparatus as above described, an entire leg could be sprayed in five minutes.

2.—That if the burned surfaces are treated with a wax covering in the first stages, there is much less danger of toxic absorption of split-protein from the burn, as this form of treatment seems to prevent the rapid absorption of toxic products from the burned area.

FRED B. WISHARD,
Anderson, Indiana.

BE BUSINESSLIKE

The public likes to pay its bills promptly. Nothing is so upsetting to a business man as to have his bills payable come in late. If doctors will persist in sending out their bills when the spirit moves them they cannot complain if their patients pay when the spirit moves them. When accounts are not rendered promptly the ordinary man is apt to feel that there is no expectation of prompt pay. Human beings are so constituted that they have no hesitancy in taking advantage of one who is apparently willing to be imposed on.—*Med. Economics.*

THE TREATMENT OF PNEUMONIA

The first thing to be considered in all acute disease is the symptoms which first present themselves; to wait until a diagnosis is established is a waste of time upon the part of the physician and exposure of the patient to further symptoms which may end disastrously. Any aberration should have attention and be treated, and the earlier this is done the more positive is the result.

In pneumonia we recognize, in the physical condition of the patient, the character of the attack which we are called upon to combat and by this we are able to choose the remedy suited to the condition.

First of all, it is necessary to clean out the intestinal canal, and this is best accomplished with calomel 1 grain, in divided doses, followed by magnesium sulphate, from 30 to 60 grains, in hot water.

At the outset of pneumonia we have a marked congestion following or existing with a chill, accompanied by an elevation of temperature and this is often controlled by acontine 1/800 grain, every 15 minutes, until effect, and in several of the cases, presented in this paper, the disease has ended at this point. Should any cardiac disturbance occur, either digitaline or veratrine, as required, may be added to the prescription.

Having failed, either from too late a call, or the violence of the attack, to control the congestion stage, the second or inflammatory stage is established with a temperature running from 102° to 104°F., pain, generally in the upper lobe of the right lung, occasionally in both lungs, with friction sounds and mucous rales. It is this stage which demands the closest attention upon the part of the physician, as on the success of his medication and nursing the life of the patient depends. The fever denotes the progress of the inflammatory process and must be met with aconitine 1/800 grain, combined with digitaline 1/64 grain, or veratrine 1/64 grain, and strychnine arsenate 1/64 grain, according to the sthenic, or asthenic condition of the patient; this prescription should be administered without reference to the age of the patient; every 15 minutes during the first hour, noting the thermometric change produced with each dose, then every 30 minutes during the second hour unless the temperature has been reduced to normal, otherwise it should be continued every hour until effect.

As to the nursing: the patient must be kept in bed and the temperature of the sick-room maintained at from 65° to 70°F.; the chest should be covered with warm dry cloth, preferably woolen, sheepskin with the woolside next to the skin, mustard poultice or antiphlogistine, or any other covering that may be available.

The cough is best controlled with calcium iodized given *pro re nata.*

When rust-colored sputum appears, often streaked with fresh blood, the condition is promptly met by the administration of atropine sulphate, 1/1000 grain, every 30 minutes until effect, which generally happens after the second or third dose.

If the fever is controlled and the temperature brought to normal, as it is in the greater number of cases, the disease is at an end, with or without a crisis, and convalescence is established. It is now that careful nursing is required; the patient should be kept in bed for at least one week; the diet should be light, easily digested, or preferably predigested food with fruit juices in limited quantities; the most careful attention should be paid to elimination.

If this plan is followed, satisfactory results will be secured and the patient relieved from the annoyance of physical pain and the massive doses of medicine generally prescribed. In none of the cases that I have

treated has the amount of medicine been taken, aside from the cathartic, equalled one grain, notwithstanding the fact that one case lingered and required treatment for nine days.

The percentage of deaths reported, none of them due to pneumonia although it was a prominent factor, was not 3.5 percent, or less than the treatment by any other method yet reported. Musser and Kelly, "Practical Treatment," Vol. 2, page 270, give the mortality in pneumonia as between 20 and 40 percent. In the April number of CLINICAL MEDICINE, page 251, in the article on "Quinine Treatment of Lobar Pneumonia," the writer gives the death rate as "approximately at 25 percent"; same article and page, "Vaux reported that of 4,503 cases in Pittsburgh, Pa., 1,860 died, or a percentage mortality of 41 resulted," "Moore and Chesney of the Rockefeller Institute treated 787 cases of lobar pneumonia with 102 deaths or a percentage mortality of 12.96."

These last cases reported in CLINICAL MEDICINE were treated with large doses of quinine and, so far as the writer is concerned, he believes the disease to be preferable to the treatment.

W. T. THACKERAY,

Fowlerton, Tex.

"HOW MUCH IS YOUR FEE, DOCTOR?"

"How much is this operation going to cost me, Doctor?"

"Well, I am going to charge you, for giving you the skill I have worked 20 years to acquire, and for the knowledge which I have studied years and spent thousands of dollars to gain, as well as for some half dozen hours of my time, used in examining, operating and dressing—for this I am going to charge you the same amount the automobile dealer charged you for taking you to ride in his demonstrator, and talking you into buying one of his cars. He actually spent less time on you than I spent and certainly spent less than I on his education and training. As to taking responsibility, he took none—he had nothing to lose except his time and a small portion of his overhead expenses. I had your life in my hands: and there were moments during the operation when that responsibility weighed heavily. Do you consider that he rendered you a greater service than I? It certainly cost him less of his vital force to render it. You feel that I am taking great advantage of you when I charge you $200 for putting your body in the best repair of which it is capable; but you are pleased and happy to pay him $200 for persuading you to buy his brand of car. I realize that it seems to you that in one case you are paying for personal service, which gives you no pleasure, and in the other case for merchandise, for goods, you can actually see and feel and which do give you pleasure. But you should also look at it from the viewpoint of the motor car dealer and myself.

"Similarly, for the care I give your wife throughout her pregnancy—for the numerous examinations and for the encouragement and heartening I try to give her—for the disturbance of my rest in the dead of night, for the hours of waiting, with eyes heavy for want of sleep—for taking the responsibility of doing the very best possible for mother and babe and for watching and guiding them through the first ten days of the babe's life; for all of this, I am going to charge you the same amount as the piano dealer charged who talked with you for an hour on two or three occasions, very courteously explained to you the superior points of his piano and finally drew up the contract and made you the sale. You never thought he was asking too much of you, because you never really considered him as asking you anything for his service. You were paying $400 for PIANO and it did not seem to you unreasonable. If the salesman had charged you even $10 for his personal services in showing you the pianos, you would have been indignant. But with the impersonal thing, the piano, and its value as merchandise and not as service, you feel no resentment nor injustice.

"You simply do not stop to analyze. You do not realize that you are paying anything for personal service when you buy merchandise. Besides that, when you pay for medical service, you are usually 'paying for a dead horse.' You have already had the relief from pain, or from the anxiety over sickness. With your car, you are paying for pleasure which you are going to enjoy or which you are still enjoying. If you were obliged to pay your doctor bill before you got relief from discomfort, you would pay more eagerly and willingly.

"For all the calls I made at your house when you had the flu; for giving my most careful thought as to the best way of managing your illness; for exposing myself to possible contagion of your disease; for the five or six hours of actual time I spent calling on you and going to and from your

home, and for the various supplies I expended in treating you, I am going to charge you the amount which you put into the radio dealer's 'profit account' to compensate him for having placed his receiving set in your living room. Remember, I'm not talking about the cost of the set, but what you paid him to induce you to choose it.

"Am I fair? Or am I an extortioner? For my services to the community year in and year out I am not demanding any more than the head of your bank, nor than your successful realtors or your merchants—often less. I usually work more hours than they do; and I never consider my own comfort.

"Do you really think that I am a 'Grafter'?"—From *Med. Economics.*

NERVOUS STRESS CAUSING SYMPTOMS*

There are many patients who suffer from a wide variety of distressing symptoms which have no basis of physical pathology but are due solely to the fact that they are living in a condition of abnormal nervous stress—an overmobilization of energy. These people, through morbid self-observation, frequently raise the sensations caused by normal physiologic processes, such as intestinal peristalsis, into the field of waking consciousness, interpreting these sensations as manifestations of disease, and developing a motor habit to "do something about it."

These symptoms are *not* imaginary. They are really *there*, though there is no cause which the laboratory can recognize.

Cases

Case 1.—A very active and strenuous man was, rather indiscretely, warned by a physician that, later in life, he might develop apoplexy. At the age of 55 years he had a few dizzy spells and thereafter lived in a torturing fear that he might have a "stroke" at any minute. This fear seriously impaired his efficiency and disorganized his life. A careful physical examination revealed nothing abnormal except a systolic blood pressure of 175.

Case 2.—This patient, when under emotional strain, developed severe gastrointestinal distress and palpitation. When doing heavy physical work or when free from responsibility he was much better. In the hands of a careless man he would, no doubt, have had his teeth and tonsils removed and have suffered operations upon his prostate, sinuses or abdominal organs.

Both of these patients were relieved of all symptoms by explaining the conditions to them and by instructing them how to relax their nervous and muscular tension. They required systematic retraining of their physical and mental processes and advice to the effect that they must live less violently and develop a degree of equanimity.

G. B. L.

*Remarks by Dr. G. S. Amsden, of Albany, N. Y., at the meeting of the A. M. A. at Dallas, Tex., in April, 1926.

DIATHERMY IN PNEUMONIA

On March 19, 1926, at 3:30 A. M., I was asked by phone if I had any oxygen; replying in the negative, I then suggested diathermy, knowing it to be a case of pneumonia in a child 6 years old. The father said, "I will send a car for you at once."

When I arrived the room was full of neighbors and friends, who, with the attending doctor, were standing around, apparently hopeless of saving the life. I immediately applied the electrodes to the back and front of the child's chest and started the machine. In less than two minutes one of the nurses announced that the pulse was stronger. (I had been unable to find any pulse before applying the electrodes.) She continued to improve and we applied the current for about an hour. In the meantime, with the arrival of oxygen, it was given at the same time and the patient went on to complete recovery. Diathermy was used but once.

I notice in CLINICAL MEDICINE that some are having difficulty with erysipelas patients. With an experience of fifty years in its use, I find that an application of honey will cure it as if by magic. A simple remedy, but it gets results.

C. E. HAYWARD,

Wagoner, Okla.

[Diathermy seems to be helping in the cure of many cases of pneumonia. It is certainly worth trying.

The picture of that sick-room can be reproduced in the memory of every country practitioner.

What possible effect honey can have in curing erysipelas is difficult to understand, but it might be tried, if valuable time is not wasted in the experiment.—ED.]

HORRIBLE HALITOSIS

Out of the affairs of men has come halitosis. Governments are falling here and there. Why? Halitosis! The League of Nations suddenly adjourns one of its important sessions. Halitosis again! Babe Ruth

strikes out; the blame is laid on the catcher who halitosed so strongly that the swatking couldn't see the ball in the fog. Positions are being lost, sweethearts are being lost, time is being lost—everything but the halitosis is lost.

Possibly the passage of the eighteenth amendment to the constitution of the United States has been responsible for halitosis. If we are to read the shining advertisements we are driven to the belief that bad breath has epidemic proportions and is undermining the foundations of society. But blisterine has come valiantly to the rescue and yeast cakes work while you sleep! What the halitosis do we care, with such remedies at hand?

But after the smoke has cleared, we find that bad breath may be only a lack of mouth cleanliness. We may find, too, that if persistent it is a symptom of trouble somewhere. If the stomach is not functioning properly, it must be looked after and the processes of elimination must be improved. Possibly the teeth are decayed food harbors—they may need cleaning. Examination may indicate pus pockets. Then there are the tonsils with their tendency to become infected. Let's find out what and where the trouble is—then get busy.—*Health Messenger.*

SMALLPOX IN INDIA

Mr. K. K. Baboojee, of Bombay, India, states: "Children from one to five years old die of chickenpox and smallpox to the extent of six hundred thousand to seven hundred thousand every year. There is no remedy to prevent this disease and in order to get a blessing to stop this heavy death toll, if there is some cure by medicine or injection on your side, kindly advise me, so that India will be grateful to you."

We have already written him, giving him your address and would appreciate it if you would send him any information at your disposal, as well as data concerning vaccines and antitoxins.

JOSEPH H. KRAUS,
Field Editor, *Science and Invention.*
New York City.

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[Needless to say, the information was sent at once.

Most of us are very calm about the smallpox question and permit the antivaccionists to carry on their propaganda unchecked, because we, in this well-vaccinated country, rarely see a case of this terrible disease.

But how would it be if our children were dying by the hundreds of thousands (for what our correspondent calls chickenpox was probably mild smallpox)? Would we then be so indifferent?

If the antivaccionists should succeed in getting their way—and they are doing it, in some parts of the country—it would not be many years until such a slaughter of the innocents could take place right here in the United States.

It is all very proper to thank God that we do not live in a land which has not been reached by the discoveries of modern medical science, but it is vital to remember that our enviable position cannot be maintained without a struggle. If we become complacent we are in danger of slipping.

Every physician knows the life-saving value of vaccination; but by no means all the people in our communities know about it. It is our duty to *tell them,* and in no uncertain terms. It is our duty to refute the flimsy and unsound sentimentalizing of misguided women and misinformed men who are striving to undo much that sanitary science has done for us.

Read this pitiful little story again, and then read it to your patients and get your local paper to publish it, with suitable comments by the Health Officer or the County Medical Society. Here is one way of doing your community a conspicuous service.—ED.]

THE FENCE OR THE AMBULANCE

"'Twas a dangerous cliff," as they freely confessed,
Though to walk near its crest was so pleasant;
But over its terrible edge there had slipped
A duke and full many a peasant.
So the people said something would have to be done,
But their projects did not at all tally,
Some said, "Put a fence round the edge of the cliff";
Some, "An ambulance down in the valley."

But the cry for the ambulance carried the day,
For it spread through the neighboring city;
A fence may be useful or not, it is true,
But each heart was brim full of pity
For those who slipped over that dangerous cliff;
And the dwellers in highway and valley
Gave pound or gave pence, not to put up a fence,
But an ambulance down in the valley.

"For the cliff is all right if you're careful," they said,
"And if folks even slip or are dropping,
It isn't the slipping that hurts them so much
As the shock down below when they're stopping."
Then an old sage remarked: "It's a marvel to me
That people give far more attention
To repairing results than to stopping the cause,
When they'd much better aim at prevention."

"Let us stop at its source all this mischief," cried he,
"Come neighbors and friends, let us rally,
If the cliff we will fence we might almost dispense
With the ambulance down in the valley."
"Oh, he's a fanatic," the others rejoined.
"Dispense with the ambulance? Never!
He'd dispense with all charities, too, if he could;
But no! We'll protect them forever;
Aren't we picking folks up just as fast as they fall?
And shall this man dictate to us? Shall he?
Why should people of sense stop to put up a fence
While their ambulance works in the valley?"

But a sensible few who were practical, too,
Will not bear with such nonsense much longer,
They believe that prevention is better than cure
And their party will soon be the stronger.
Encourage them, then, with your purse, voice and pen,
And (while other philanthropists dally)
They will scorn all pretense and put up a stout fence
On the cliff that hangs over the valley.

(Reprinted from the August, 1911, and June, 1926, *Crusader*.)

PARATHYROID SUBSTANCE IN ABDOMINAL CONDITIONS

I wish to report two cases that seem to me to be worth while, so that others who have more material may try out the treatment on a larger scale than I can.

Mr. E. was operated upon for perforating pyloric ulcer, July 27, 1925. There was a large amount of bile in the abdominal cavity and considerable infection of the intestines.

About three weeks later, while still in the hospital, he showed indications of intestinal obstruction. He was opened up immediately and a large number of adhesions found, which were given the usual treatment. In due time he came home and on January 22, 1926, he again showed symptoms of intestinal obstruction. On January 23, he was operated upon and a greater number of adhesions found, but very little infection. He came home in two weeks, but after a few weeks began to bloat in the lower portion of the abdomen, with symptoms of newly forming adhesions.

About this time I read Dr. J. B. Mackay's report, in CLINICAL MEDICINE, for March, 1926, on his treatment of a fracture with parathyroid. The thought came, if parathyroid would correct improper healing in a bone, why would it not do the same in E.'s intestines? He was immediately put on 1/10 grain of the drug three times a day. He had been on soft diet for some time previously, but it had not accomplished as much as could have been desired.

In about a week improvement in his condition was noticed. He kept up the treatment for three weeks and reported that on two occasions the belly was perfectly flat in the morning. Since that time the bloating has not increased; but before taking the medicine the increase had been steadily advancing day by day.

Two facts seem evident in his case: first, that the parathyroid stopped the formation of new adhesions and promoted healing; second, that it had no effect on the adhesions already formed.

The second case is that of a child three years old, ill with "intestinal influenza." He was badly bloated when first seen and on the second visit the same day the bloating had increased so as to embarrass the breathing considerably. The prospect of saving the child's life seemed small. He was put on 1/80 grain of parathyroid every four hours. Twenty-four hours later, improvement was great enough to give hope for his life. He was under observation for five days and gained slowly, but steadily, and finally, in about two weeks, was reported as recovered.

JAMES G. HOPKINS,
Eads, Colorado.

[This may be empirical treatment but results were produced by *something*. Of course, the use of parathyroid substance in malunion of bone is logical, on the basis of what we know of the effect of this gland on calcium metabolism, but it may have other powers and properties of which, as yet, we know nothing.

The results in the second case seem even less likely to have been due to the parathy-

roid—but we do not know all there is to be known.

Incidentally, we do not know what it was that really ailed that youngster, because the term "intestinal influenza" means just—*nothing*. The sooner we all get away from the habit of using loose terms in our scientific speech and thinking and make accurate, clean-cut diagnoses, the faster will Medicine progress.—ED.]

HYDRARGYRUM CHLORIDUM MITE AND LATIN NAMES IN GENERAL

The editorial on calomel, in the May number of CLINICAL MEDICINE, interested me greatly, but I prefer to use the Latin name, *Hydrargyrum Chloridum Mite*, for this and for all other drugs, and I feel that all physicians, pharmacists and pharmaceutical manufacturers should do the same. The pharmacopoeial name is the correct one and I prefer to buy my drugs from a manufacturer who labels them in this manner.

The reason for my feeling is that if one uses the common name in prescribing or in labeling drugs, the patient readily recognizes what he is taking and the next time he is ill he will not consult the physician but, considering that he knows what he needs, will go to the drug store and call for the medicine which has formerly been prescribed for him. Not only this, but he will tell his neighbors what the doctor gave him and they, too, will make use of the information, to the detriment of the physician and of themselves as well. The doctor who is careless in such matters has no one but himself to blame if this happens and should not complain.

I never tell patients what drugs I am prescribing for them. The science of materia medica and therapeutics cannot be learned during a thirty-minute call. Our education in these subjects costs us much time and money and we are foolish if we try to teach it to our patients for nothing. I take it that a man calls me to diagnose and treat his case, not to give him a course of medical lectures, and I act accordingly.

The injustice resulting from the giving of promiscuous and unnecessary information is not alone to the physician who gives it, but to other physicians and to the patient himself, for it encourages the pernicious habit of self-drugging, which is too common as it is.

I consider *Hydrargyrum chloridum mite* a very valuable drug, if properly used. Some declare that it has no effect upon the liver, but I have found, in 28 years of practice, that where a patient has a furred tongue (no matter what the color), a bad taste in the mouth, nausea, bilious vomiting, with or without constipation, there is no other drug which will start the flow of bile into the intestinal tract and clear up the symptoms like a dose of from 1 to 5 grains of *Hydrargyrum chloridum mite*, taken at bedtime, and followed, in the morning, by a good-sized dose of magnesium sulphate, plain or in one of the pleasant effervescent preparations. Not only is free elimination secured, but these two drugs, thus combined, make one of the most valuable intestinal antiseptics we possess.

I usually prescribe the mild chloride in a single dose at bedtime, as I have found that it works as effectively as it does when given in broken doses, and that, when repeated small doses are given, the patient frequently becomes so nauseated before he has finished taking them that his rest is disturbed. If nausea follows the single, moderately large dose, it usually is not noticed, as the patient is asleep before it comes on.

Regardless of what drugs you use, keep the names to yourself and urge upon the pharmaceutical houses from which you purchase your medicines that they use the Latin names in labeling.

JOHN A. GIBBONS,

Mitchell, Ind.

[There is food for thought in the suggestions of Dr. Gibbons. The custom of writing prescriptions in Latin is a time-honored one, and we have, so far, seen no sound reason for changing it. Doctors are supposed to be able to write such a prescription, accurately and legibly, and those who cannot had better learn as promptly as possible.

We feel that it is generally a good policy to tell the patient, not what we are giving him, but what *effects* we expect to produce. In this way we enlist his cooperation, and, when the effects we have described appear, his confidence in our knowledge and in the potency of our remedies is vastly strengthened and his psychic attitude is enlisted on our side.

As to the labeling of drugs, it might be instructive to the doctors, but we feel that no physician should put up a prescription in the patient's presence, any more than a pharmacist does, and that, for the dispensing physician, a separate drug room is almost a necessity. This can well be com-

bined with his laboratory and will prove very profitable, professionally and economically.

Let us have more talks like this, out of the heart, from our readers.—ED.]

THE TEN COMMANDMENTS OF MEDICAL ETHICS

I. *Reverence and Responsibility.*

Remember the Creator in the days of thy professional youth. Bow reverently before the wondrous human body, sick or well, as thou wouldst before a sacred shrine, conscious of thy high duty; resolved to serve to the best of thy power, whether the patient be white or black, prince or pauper, saint or degenerate.

II. *Historic Appreciation.*

Honor thy father and thy mother. Likewise give praise to the fathers in medicine whose rich heritage of scientific and clinical truth has been handed down to thee through centuries of patient toil. Hold fast to that which is good, but let not the prejudices coming out of the past, blind thy vision to the newer truths of medical advancement.

III. *Keeping the Faith.*

Thou shalt not worship the graven images of false practice—of avarice and selfishness which eat at the very heart of medical idealism; of clever artifice or brazen quackery which knowingly deceives; of erratic isms and cults which tell but half truths, leading the ignorant and unwary astray.

IV. *Inviolable Confidences.*

Thou shalt not disclose the secrets confided to thy keeping by trusting patients, unless they be of criminal or treasonable import. Nor shalt thou abuse the intimacy granted to thee by women, which becomes a professional and moral obligation thou shouldst hold inviolate.

V. *The Sanctity of Life.*

Thou shalt not hazard life unwarrantably. Neither shalt thou shrink before the obvious perils of duty when life is at stake. The unborn thou shalt not destroy, except after due consultation it is deemed advisable for the saving of life. Suffer not death to come through neglect in the routine care of the sick, nor from failure in reading, study and counsel, to gain the greatest benefit for the patient.

VI. *Professional Cooperation.*

Thou shalt not bear false witness against a worthy professional brother, but seek ever to protect his reputation from calumnious attack by misinterpreting laymen. Of thy knowledge give him unstintingly, counseling and cooperating for medical progress.

VII. *Gentlemanly Conduct.*

Thou shalt not prate of cases, nor countenance unseemly boasting of thy achievements in the lay press. Always a gentleman, let thy conduct be reserved but without cowardice; courteous but without flattery; dignified but of warm heart; tender in ministration but firm in command; clean of body, speech and mind.

VIII. *Honesty in Business.*

Thou shalt not steal; neither shalt thou make extortionate charges nor deceive by the secret division of fees. Let thy service be worthy of thy hire, for which exact fair compensation, but by open methods, with conscience void of offense toward thy fellowmen.

IX. *Obligation to One's Own.*

Take heed of the morrow for the sake of thine own flesh and blood. Therefore shalt thou keep orderly accounts, collecting from the fullhanded just recompense for services rendered. To the poor and to the families of deserving colleagues thou shouldst account it a privilege to render faithful attention.

X. *Personal and Public Service.*

Remember thou art thy brother's keeper —physically, in the measures advised for the prevention, alleviation or healing of disease; spiritually, in the cheer thou bringest to heavy hearts and the courage thou givest to halting steps. So walking upright before man, mayest thou show thyself approved unto God. Thus journeying toward life's end, if not singing with the Psalmist, "My cup runneth over," thou wilt at least be sustained by the reflections of "A workman who needeth not to be ashamed."

FRANK B. WYNN (Deceased),
In *Ind. Med. Jour.* for Jan., 1926.

DIPHTHERIA ANTITOXIN AND SMALLPOX

While at the New Mexico State Medical Society meeting at Albuquerque, N. M., last month, I expressed the belief that antitoxin, given as a treatment or to immunize against diphtheria, affected or modified the severity of a later infection of smallpox. The following cases will, I think, bear me out in my contention.

Last December I was called to see a small boy, 4½ years of age. He had been sick for ten days with "sore throat," so the parents told me.

I found a patient with nasal diphtheria. He lived only ten or fifteen minutes after my arrival. I barely had time to make a diagnosis, let alone to give any treatment. There were three other children in the house belonging to two families—the mothers being sisters—and the following morning two of these had diphtheria—one nasal.

Immediately after the boy's death, I drove fifty miles to the nearest drugstore and back with some antitoxin. I gave the three children each an immunizing dose of from 500 to 1000 units of the antitoxin. That night about nine o'clock, the mothers were given 1000 units each. One of the fathers was immunized; the other did not want it. The two children that developed diphtheria were given 7,500 and 10,000 units the next morning. All did well and the two little ones were clear of diphtheria in four and five days.

In March I was called again to the same house and found the youngest, a child of 7 months, with a temperature of 105.4°F. in the axilla; pulse 178; a severe coryza; bronchitis; and very restless.

The following day I was called back and found probably ten or a dozen spots on the breast, face, neck and arms, one on one leg just above the ankle. They resembled the rash or papules of chickenpox except that there was a rolling-shot feeling under them.

There had been a number of cases of smallpox a few miles distant. These folks had not been anywhere, and no one had been there except a small girl of a neighbor, thirteen days before. I told them that it looked more typical of chickenpox than anything else, but also spoke of the shot-like feeling being a mark of smallpox.

The papules were not as you would find them in either a chickenpox or a smallpox. They were very peculiar and different from anything I had ever seen before—even irregular in outline and form. However, I reported it to the health officer as "chickenpox or smallpox." I could do nothing else *then*.

I spoke to the family about vaccinating the rest, but, as I hesitated about a definite diagnosis, they did likewise about being vaccinated. It nearly proved a fatal error on my part.

The child was very sick for only one day —the day preceding the rash. Exactly twelve days later the two other children, the two mothers and one father were taken sick with—smallpox. In all but the father the papules were scattered and few, and very little more like smallpox than the first case. All these except the father had been given the antitoxin. All the cases were mild except that of the father. One child had only seven papules and modified pustules; one mother only a few more.

The father had the worst case of smallpox I ever saw recover. In places, several of the large pustules merged into one. He was the most prostrated man I have seen in a long time. He vomited almost incessantly for several hours.

Later on, the family learned that the neighbor girl who was in the house had just had smallpox.

Here we are not called to see any case—as a rule, I mean—that has any kind of rash, for dread of quarantine. We are not called for trivial matters, and a call means a chance to test your skill; no bluff goes.

Back to the subject again: In all these cases the infection was the same and from the same source.

Why were those who had been given the antitoxin for immunity, or as treatment for diphtheria, so mildly affected with the smallpox? Why was the father so dangerously near the reach of "the man with the scythe," while all others got by so lightly, unless the antitoxin gave them a certain degree of immunity? None had ever been vaccinated against smallpox and all had been healthy and strong individuals, and are now.

E. J. HAY,

Rogers, N. M.

TREATMENT OF WOUNDS WITH DICHLORAMINE-T*

During the World War the use of chlorine compounds proved of great value. It remained for us to adapt these preparations to our civil practice. Dakin's sodium hypochlorite solution, with the Carrel technic, was an ideal means of combating infection, but, on returning to civil life, I found that the proper technic; namely, perfect titration, uniform tubing and glassware, training of assistants and the necessary expense thereby involved, made its use impractical. At the instigation of Doctor Homer Gage, I began the use of the more stable preparation, dichloramine-T, suggested by Dakin in

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1917. I can now revert to nearly seven years of its use in both clean and septic wounds.

I have before me the excellent monograph by Doctor Joshua E. Sweet of Philadelphia, written in 1917 when connected with Base Hospital No. 10, France. It was to Doctors Sweet and Walter E. Lee that Dakin entrusted the practical testing of his new preparation. I have found their principles of practical value and have gained through their experience, adding certain measures acquired at the Rockefeller Institute during the War and others found through necessity in civil practice.

Preparation and Stability

We have adhered to one method of preparation and one strength. It is prepared in the hospital pharmacy in 500 Gram lots by adding to 25 Grams of dichloramine-T crystals, which may be obtained from any good wholesale drug house, enough chlorcosane, prepared by Abbott, to make 500 Grams by weight. The crystals dissolve in the chlorcosane when agitated in a water bath at 70 to 100°F. This 5-percent solution we have found adequate for all purposes and I have not attempted the use of 20-percent solutions as used under certain conditions by Sweet in his original work. The freshly made solution is distributed in four-ounce, brown bottles and kept on the wards, preferably in a cool, dark place. It is quite stable under these conditions and until a clouding or sedimentation takes place may be considered dependable.

Use in Traumatic Surgery

In all work of this kind I have first had the affected parts shaved, cleansed with benzine and 70-percent tincture of iodine applied. I have not seen any contraindications to this form of preparation before the use of dichloramine-T. The debridement and repair are then done, the affected parts thoroughly covered with dichloramine-T and partial or complete closure of skin completed. The degree of skin closure in this type of wound I consider of importance.

With injuries created in a clean manner or where total excision of infected tissue may be accomplished, complete closure is feasible, leaving a few strands of silk-worm gut or small Penrose tubing to give vent for serum. This type of closure, however, except in amputations, I have rarely attempted, being content to lean toward the conservative side and do little primary closure.

In the average case, coming from street, railroad or shop, it has been my habit to consider the wounds as essentially infected and treat them accordingly. The benzene and iodine preparation is used, debridement done and deep parts of wound packed with gauze strips, saturated with dichloramine-T. Where bone is compounded, unattached fragments are removed as completely as possible and the area directly above bone ends made the seat of a gauze strip with dichloramine-T applied. Another on a more superficial level takes care of the soft parts. External wet dressings are applied in the form of hot saline or saturated boric acid solution. The first dressing is usually done in forty-eight hours. Packs are carefully removed and parts either sprayed with an all-glass atomizer or fresh dichloramine-T applied to the surfaces with cotton swabs. Packs are now left out and wet dressings applied, unless there is still a large degree of dead space, when it would be safer to replace gauze strips with dichloramine-T for another forty-eight-hour period. At the third forty-eight-hour period, if culture and smear prove negative, secondary closure may be done, or what I have found more satisfactory, the gradual closure with strips of adhesive.

In head injuries, dichloramine-T may safely be applied to the dura and subdural structures. In abdominal injuries its use is not advised.

Use in Sepsis

The affected part, after adequate opening has been made, is packed with gauze saturated with dichloramine-T. The skin edges are wiped off and sterile zinc oxide ointment freely applied. Hot, wet dressings are then placed over the wound. The first dressing in septic cases should be done within twenty-four hours and thereafter every forty-eight hours. Zinc oxide ointment is applied each time and the wet dressings continued. A clean, granulating surface is usually noted within seventy-two hours after operation. When the wound reaches that state, it may be merely swabbed or sprayed with dichloramine-T and a dry or wet dressing applied.

The use of gloves for these dressings, as well as in the traumatic cases, is a distinct advantage, especially in the larger wounds where metal instruments may be avoided; the excess dichloramine-T is squeezed back into the medicine glass and the pack introduced with the gloved hands. From the simple, localized infection to the more extensive processes, with and without bone

involvement, the same technic has been adhered to.

I have not used dichloramine-T on burned surfaces nor in suppuration affecting either pleura or peritoneum.

It is true that the average man looks upon another's results with skepticism. And it is for that reason that I have not attempted to cite statistics bearing on numbers and types of cases and brevity of stay in hospital, yet I may conclude from my own cases that the use of dichloramine-T has resulted in five observations:

1.—Simplicity and uniformity in technic easily acquired.

2.—A minimum of expense.

3.—A rapid development of healing surfaces, associated, it is true, with an unpleasant burning sensation, for the first few minutes after the earlier dressings, yet compensated by the lack of toxic symptoms presented by an unclean surface.

4.—Favorable response in bone conditions, as osteomyelitis and compound fractures. In one, the tendency to heal without sinus and sequestra formation and in the other the ready appearance of good union. It can well be said that, in both these instances, the primary operation largely governs these results; yet to acquire and maintain sterility, is, to my mind, no minor secondary factor.

5.—Total absence of gas bacillus infection.

DONALD S. ADAMS.

INFECTION OF NECK TREATED BY MEDICAL DIATHERMY

History of Case:

Paul S., aged 35 years. One year ago he had a mastoid operation. Three months later a brawny induration appeared behind the right ear and spread downwards onto the neck, below the operative scar. This was treated by hot fomentations and later incised, but did not clear up and would open spontaneously and then the sinuses would close, only to open again, over a period of nine months. I saw him for the first time in April, 1926. There was a large induration behind and below the right ear and an open sinus in the neck below the angle of the jaw. He said that he had been treated by several physicians without avail.

Treatment:

The indurated mass was opened under local anesthesia, by using an electro-coagulation needle connected to high-voltage, high-frequency terminal, on a portable machine. A large amount of pus was evacuated and the abscess cavity washed out twice with chlorazene solution. Three applications of medical diathermy were applied at 3-day intervals, using medium-size sponge electrodes covered with German silver. Patient reported at office June 19, 1926, with neck entirely healed and no swelling or tenderness present.

OLIVER H. GRIFFITH,
Wheeling, West Va.

The Leisure Hour

Conducted by GEORGE H. CANDLER, M.D.

Song of Gladness

I AM glad that I am alive;
Glad that I can scramble
Up rocky hillsides,
And crawl under hanging branches;
Glad that I can see the milk-white faces of bloodroot
Peering up through last-year's leaves,
And hear the rush of waters
And the wind in the trees;
Glad that wise men have written great books
For my soul's nourishment,
And that music and sunset and moonrise
Stir me to throbbing emotion;
Glad that the shock of cold water on my skin
Thrills me to my finger-tips,
And that I can lie down at night,
With untroubled heart,
To sleep the sleep of happy childhood,
And arise, joyously,
To work and play and love and service.
Indeed and indeed I am glad I did not die
When I was a child.

G. B. L.

The Public's Heritage*

AN attack on the National Forest Preserves and the public domain, threatened in Congress by the livestock interests, demands consideration by conservationists and by all thoughtful people. Last summer and autumn a committee of United States Senators journeyed through the West, inquiring into matters connected with the handling of the National Forests and of the National Parks.

The committee had meetings with the livestock interests in Salt Lake City and in other places, and its members listened with sympathy to suggestions put forward by that industry, looking to its own advantage at the expense of the public. Its demands appear even to call for a monopoly by the sheep and cattlemen of the National Forests and the public domain at large. A summary of these demands is reported to be something like this:

The livestock people wish the enactment of a Federal statute recognizing, defining and protecting the grazing rights upon the National Forests, which by law are now in the hands of the Secretary of Agriculture. They wish the allotment of grazing privileges on an area rather than on a per head basis, the permittee to have the sole privileges to this grant, with a right to determine its carrying capacity. In other words, they ask that it be made his property.

They wish these grazing rights to be based upon priorities and preferences at the time of the enactment of such a law, and the endowment of these rights with a property value which shall be transferable. They ask that the charge basis be such as will not depreciate privately-owned dependent properties of the owners of such rights; that the grazing taxes shall go to the respective states in which they are collected. They wish similar privileges to extend to any law enacted to cover unappropriated areas of the domain.

Incidentally, they want the care of the National Forests, which for many years have been in charge of the Department of Agriculture, transferred to the state courts!

In other words, the livestock interests ask Congress to take away from the public, which owns the National Forests and the public domain, its rights to this vast territory and transfer them to the livestock people.

They thus openly demand that the ownership rights of 100,000,000 people be swept out of existence.

As if that were not enough, these modest people demand also that there shall be no further extension to existing National Parks, and no establishment of new parks or Federal game preserves in eleven states of the West, where grazing is an important industry!

They oppose any attempt to increase the present grazing fees, and wish to use public property without paying any adequate rental for it. This is perhaps something that we should all like to do, but the public may fairly enough inquire why the livestock industry should receive from the Government a subsidy which is not given to mining men, shipbuilders or steel men.

It is a recognized fact that grazing—forage for livestock—is more valuable now than it used to be, because there is less of it; the area for grazing is much smaller than formerly. Range area has been decreasing for more than forty years, and at the present day cattlemen and cattle companies are glad to hire unused range at so much per head, and are willing to pay the market price. Forage on the National Forests is a commercial commodity, and ranges are bought, sold and rented every day. Why should the Government pick out the livestock men of the West and present to them as a subsidy forage that is worth millions of dollars, while it requires the lumberman who buys timber on these same Forest Reservations to pay the commercial value of the timber?

When fees were first charged for grazing on the National Forests, it was intended that they should be a fair compensation for the commercial value of the forage at that time.

They have been low from the beginning, though from time to time they have been increased; but they have never reached a point where they have compared with the fees charged for grazing on private lands, and just before his death Secretary Wallace had determined to increase the fees charged the stockmen by the Forest Service.

There are not a few conservationists who believe that all grazing on the Forest Preserves should be stopped, except in the case of small settlers on or near these reservations, who have a few head of cattle or

*Editorial reprinted from *Field and Stream* for March, 1926.

sheep on which the settler and his family must depend for a living.

The running of livestock on the reservations tends to injure the forest, destroying many seedling trees, and delaying the desired reforestation.

We see the same thing on the Kaibab Plateau, where the deer are now so numerous that no new forest can start. Observations in southwestern Arizona over 200,000 acres show tremendous destruction of new forests by the grazing of cattle and sheep. They not only nip off the growing seedlings and trample out the tender plants, but they sweep off much of the growth, and the trees that survive do not grow into tall saw timber, but are crooked and short. It is calculated that on the two National Forests referred to the sheep and cattle in twenty years have eaten — destroyed — 200,000,000 board feet of potential timber. And where forests are denuded game disappears.

Twenty years ago—about the time the Forest Service was first established—the livestock men came to grips on this same subject with Theodore Roosevelt and in his autobiography he related some incidents of the struggle. He won that, as was his way.

It is a question now, just as it was a question then, of public rights against private rights, and then, as now, individuals and corporations tried to take from the unorganized public the rights which that public owns.

GEO. BIRD GRINNELL.

A VERY PERSONAL MATTER

A little while ago a colored gentleman entered the store and I met him and greeted him with:

"Good morning. Anything I can do for you?"

"Well, doctah," he replied, "not zackly fo' me but fo' a frien' o' mine."

He led me to the rear of the establishment and I surmised from the appearance of his features that his friend was in very deep trouble indeed. In an understanding tone he confided:

"He axed me ter git him a dime's worth o' dis curious ointment. Not fo' me, doctah," he added. "Fo' a frien' o' mine."

"Well," I said, "if you are taking enough interest in this friend to run errands for him why not open your heart a little more—just fifteen cents more—and get him a bottle of larkspur lotion. It is pleasant to use, has an agreeable odor, and kills the invader right now. During the world war every member of the Chickasaw Division, to which I belonged, was a free-lunch counter for these same little parasites and——"

"What dat you call 'em, doctah? Parasites? Well, I reckon dat a mighty fitten name for 'em."

"What you need," I said, "is larkspur lotion and Germicidal Soap. I know."

"Lawdee, doctah! I sho' is glad you said dat. A white man what's had 'em deserves the confidence of a colored gentleman what's got 'em. Gimme some o' dat stuff! I reckon you bettah make it two bottles o' de bird spurs and two cakes of German society soap."—*Pharmacal Advance.*

MY FORD

The Ford is my chariot,
It shall not want;
It maketh me to lie down in wet places;
It destroyeth my soul.
It leadeth me into the deep waters.
It leadeth me into the paths of ridicule for its name's sake.
It prepareth a break-down for me in the presence of mine enemies.
I will fear more evil when it is with me.
Its rods and its shafts discomfort me.
It anointeth my face with oil.
Its water boileth over.
Surely to goodness, if Lizzie follow me all the days of my life, I shall dwell in the house of the Nuts forever.—*Medical Economics.*

"EXTERNAL ADENOIDS"

In ————, Ohio, the Health Officer was examining the school children and little Rastus was sent home with a note as follows:

"This child has adenoids. Don't send him back to school until they are attended to."

When the black mammy read it she said:

"Rastus, you go right back dar and tell dem that you haint got no sich thing, cause ain't I don fine comb your head just yisterday."—*Health Messenger.*

NEW HAVEN JOSHES BOSTON

The verse about Boston has been so widely circulated that nearly every person in this country ought to be familiar with it. But not so many are acquainted with the verse that refers to Yale.

The old, familiar rhyme runs like this:

"Here's to good old Boston,
The home of the bean and the cod;
Where the Cabots speak only to Lowells,
And the Lowells speak only to God."

Our understanding is that at a banquet in Boston some professor from Yale, who possessed a sense of humor, quoted the old Boston verse and then said:

"I come from the town of New Haven
The city of learning and light,
Where God speaks to Jones
In the very same tones
He uses with Hadley and Dwight."

—*Patchwork.*

EXPERIENCE NOT ALWAYS THE BEST TEACHER

"Grandmaw Pash says ther's too much tomfoolery mixed up in th' raisin' o' children nowadays. She ought to know, she lost eleven."—*Abe Martin.*

"Dear John," the wife wrote from a fashionable resort, "I enclose the hotel bill."

"Dear Mary," he responded, "I enclose check to cover the bill, but please don't buy any more hotels at this figure, they are cheating you."—*Fischers Magazine.*

First Englishman—"Charlie, did you hear that joke about the Egyptian guide who showed some tourists two skulls of Cleopatra—one as a girl and one as a woman?"

Second Englishman—"No, let's hear it."
—*Fischers Magazine.*

Sir Harry E. Brucewell, London child specialist, says that it is wrong to keep quiet while the baby is asleep, as it ought to be allowed to get used to noises. That is the position taken by the baby toward the family in the night, also.—*Minneapolis Journal.*

THE MICROBE'S SERENADE

By George Ade

A love-lorn microbe met by chance,
At a swagger bacteroidal dance,
A proud bacillian belle, and she
Was first of the animalculae.
Of organisms saccharine
She was the protoplasmic queen,
The microscopical pride and pet
Of the biological smartest set;
And so this infinitesimal swain
Evolved a pleading, low refrain:
"O lovely metamorphic germ!
What futile scientific term
Can well describe thy many charms?
Come to these embryonic arms!
Then hie away to my cellular home
And be my little diatom!"

His epithelium burned with love,
He swore, by molecules above,
She'd be his own gregarious mate
Or else he would disintegrate.
This amorous mite of a parasite
Pursued the germ both day and night,
And 'neath her window often played
This Darwin-Huxley serenade;
He'd warble to her every day
This rhizopodical roundelay:
"O most primordial type of spore!
I never saw your like before,
And though a microbe has no heart,
From you, sweet germ, I'll never part;
We'll sit beneath some fungus growth
Till disso!ution claims us both."

—From *Hearst's International-Cosmopolitan.*

A district supervising nurse who investigated a diphtheria death in an Italian family quotes the mother as follows:

"It makes me so d—— mad to lose that baby. The dipthere he catch her. I tell you it's d—— hard work to grow a kid. You betcha I get my other kid shot."—*Health Messenger.*

Diagnostic Pointers

THE MENACE OF OBESITY

Diabetes is most common in middle-aged, obese persons. All surgical operations are more difficult and dangerous in those who are overweight. Obesity is becoming rapidly more prevalent. With the universal use of the automobile walking is becoming a lost art. Every physician should spread the propaganda against obesity by warning his patients of its dangers.—Editorial in *Bost. M. & S. J.*

MASTOIDITIS

Mastoiditis is not a disease entity, but the clinical condition may be due to various pathological conditions, such as necrosis, osteophlebitis or cholesteatoma. Every case must be carefully studied.—DR. JOSEPH BECK, of *Chicago.*

SPRUE AND PERNICIOUS ANEMIA

Sprue can be acquired in the temperate zone and a patient can live for years with this infection. A search for *Monilia psilosis* should be made in every case diagnosed as pernicious anemia.—DR. GEORGE L. LAMBRIGHT, in *Am. Jour. Med. Sc.*

ATHLETICS FOR CHILDREN

In boys and girls who are growing rapidly and who indulge in strenuous athletics, the heart is called upon to supply a rapidly increasing circulatory circuit and there is danger of serious damage to the heart muscle.—DR. ROBERT H. BABCOCK, before the *Chicago Med. Soc.*

PAROXYSMAL DYSPNEA IN SYPHILITIC AORTITIS

Paroxysmal dyspnea is a common manifestation of aortic insufficiency dependent on syphilitic aortitis, being often the first symptom of this disease.—DRS. KEEFER and RESNIK, in *Archiv. of Int. Med.*

BENEDICT'S TEST FOR SUGAR

Benedict's reagent is made up as follows:

Copper sulphate (C. P. Crystallized)	17.3 gm.
Sodium or potassium citrate	173.0 gm.
Sodium carbonate (crystallized)	100.0 gm.
Distilled water q.s. ad	1000.0 cc.

To about 5 cc. of the reagent add from 5 to 10 drops of urine (not more) and boil vigorously for one to two minutes. Glucose will cause the appearance of a red, yellow, or greenish precipitate that fills the whole solution. When there is only a trace of glucose, the precipitate appears only on cooling. Benedict's reagent is also reduced by alkapton acids and by conjugated glycuronic acids. Because of its simplicity and reliabiliy, Benedict's test is the one most commonly used, and is highly recommended.

ROUTINE WASSERMANN TESTS

Every patient [except, perhaps, those with obviously transient acute disorders.—ED.] who presents himself to a physician for examination should have a Wassermann test made as a matter of routine. At least 5 percent of patients in whom syphilis is not suspected will be found to give a positive test and to require antisyphilitic treatment.—DR. REGINALD FITZ, of *Boston, Mass.*

LATE LESIONS OF SYPHILIS

The late lesions of syphilis are usually asymmetrical; indurated; tend to ulcerate; assume a circular form, possibly with healing in the center and extension at the edges. They come on rather late in life and must be carefully differentiated from other conditions having a superficial resemblance. The main reliance in these cases is a clinical diagnosis, as the Wassermann test and dark-field examination are irregular and uncertain in late cases.—DR. HENRY ODLAND, of *Seattle, Wash.*

PYELITIS DUE TO B. COLI

Oftentimes the presence of pyelitis due to *B. Coli* results in the diagnosis of lumbago, of renal calculus, and sometimes of appendicitis. Frequent urination with pain and incontinence of urine are often present, and the urine may have a characteristic "fishy" odor, a little albumin, sometimes pus, and rarely blood.—SIR WILLIAM HALE-WHITE, of *London, Eng.*

ETIOLOGY OF PERNICIOUS ANEMIA

The stools of most patients with pernicious anemia show a preponderance of organisms of the nonproteolytic, fermentative type, especially Welch's bacillus (the organ-

ism of gas gangrene). These organisms are present in enormous numbers, not only in the colon, but also in the small intestine, even as high up as the duodenum.

In the presence of these findings, Welch's bacillus merits careful attention in connection with the etiology of this very serious and fatal disease.—Editorial in *Therap. Gaz.*

DIABETES AND ASTHMA

The time is coming, if it is not already here, when the man who waits to make a diagnosis of diabetes until his patient has sugar in his urine, or of asthma until he has a bronchospasm, will be classed in the same category with those who have to find tubercle bacilli in the sputum in order to diagnose tuberculosis.—DR. BURTON HASELTINE, of Chicago.

DERMOGRAPHIA IN THYROTOXICOSIS

Every case of toxic thyroid shows dermographia more or less markedly. This sign is as regularly present and as reliable as the Goetsch test or the excessive basal metabolic rate.—DR. MAXMILIAN KERN, of Chicago.

URINE SIGN OF TOXICOSIS

In patients who are toxemic the reducing power of the urine is increased. Ten drops of normal urine can be boiled with 5 cc. of Benedict's solution for 5 to 10 minutes and remain clear. Toxic urine will show a muddiness after 1 to 3 minutes' boiling. In cases of diabetes this sign is present for a year or more before there is actual sugar in the urine.—DR. CLIFFORD MITCHELL, of Chicago.

ACUTE OTITIS MEDIA AND MASTOID DISEASE

Consider every case of acute otitis media as a case of potential mastoid disease. Look for trouble in every case of measles, scarlatina and influenza. Chronic mastoiditis and otorrhea are absolutely preventable if the acute conditions are properly treated.—DR. JOSEPH BECK, of *Chicago.*

PERFORATED GASTRIC ULCER

When a gastric ulcer has perforated there is sometimes a sudden and remarkable temporary improvement in the patient's symptoms which may deceive the patient, the family or even the physician into a false sense of security.

In every case of *probable* perforation, operate *at once,* as those cases which are so treated within 12 hours show 90 percent recoveries, whereas of those operated upon after 48 hours, 90 percent die.—SIR HERBERT F. WATERHOUSE, in the *Practitioner.*

SORE THROAT AFTER TONSILLECTOMY

Persistent sore throat following tonsillectomy, with no visible local lesion, should always suggest syphilis.—DRS. HOWE AND SCHMIDT, in *N. Y. S. J. of M.*

RHEUMATIC FEVER

Rheumatic fever is rare in middle life, unless there is a history of previous attacks. In other words, a person between thirty and sixty suffering from an acute multiple arthritis is most commonly a victim of septic or gonorrheal infection.—SIR WILLIAM HALE-WHITE, in the *Practitioner.*

POODLES AND RABIES

More cases of rabies occur among poodles than in any other breed of dogs.—DRS. HARRIS AND OBERWAGER, N. Y. Health Dept.

SUBPHRENIC ABSCESS

When a patient who has had a septic process in the abdominal cavity, and has been doing well for from two weeks to two months, develops continuous fever, rapid pulse and malaise, without any obvious cause, the possibility of subphrenic abscess should be seriously considered.—SIR HERBERT F. WATERHOUSE, in the *Practitioner.*

EARLY SIGN OF PREGNANCY

From the beginning of pregnancy until the end of the third month the labia majora feel tense and swollen, sometimes with dull, aching pain, especially when the patient is much on her feet.—DR. J. W. TOMB, in *Brit. M. J.*

CAUSES OF WRONG DIAGNOSES

Mistakes in diagnosis by young practitioners often occur because they are looking for rare diseases rather than simple ones. Mistakes by older men are almost invariably the result of failure to make a complete examination.—SIR BRUCE BRUCE-PORTER, in the *Practitioner.*

THE UPPER LID SYMPTOM

In certain nervous and mental diseases, the author has noted that after the eyes have been closed for a few seconds, there is marked difficulty in opening them, requiring an effort to raise the upper lid, as is shown

by the associated raising of the eyebrows and wrinkling of the forehead.

This symptom is particularly noteworthy in cases of psychoneurosis and depressed mental conditions, in which depression of the cerebral cortex is more marked than physical weakness.—DR. A. W. GERWER, of *Berlin, Germany.*

LYMPHOSARCOMA AND HODGKINS' DISEASE

Lymphasarcoma disappears in *3 weeks* and Hodgins' disease in *6 weeks* after a 100-percent dose of deep x-ray treatment. All large glands should be treated in both cases.—DR. W. A. EVANS, of Detroit.

SPASTIC PARAPLEGIA

In spastic paraplegia the extremities are hot, the temperature growing less as we approach the body—the opposite of the normal condition.—DR. GEO. E. BROWN, of Rochester, Minn.

EARLY SYMPTOMS OF PARESIS

Among the earliest symptoms of paresis, irritability is commonest, occurring in 57 percent of cases. Next in frequency is a change in character, the individual losing his interests and lessening his activities, so that he is described as having become "quiet." This occurs in 38 percent of cases. —DR. HENRY A. BUNKER, in *Am. J. Med. Sc.*

STUDY OF MENTAL CONDITION

In cases where, after careful examination and study, no adequate physical basis for the symptoms present can be found, the mental condition of the patient must be thoroughly investigated.—DR. G. S. AMSDEN, of *Albany, N. Y.*

"COLDS" OF SEXUAL ORIGIN

Individuals who indulge too freely in affectionate embraces with persons of the opposite sex, but who do not obtain complete gratification, are prone to suffer from congestion of the nasal mucosa as a reflex accompaniment of the resulting hyperemia of the sexual organs. Many persons suffer from a low-grade rhinitis during the engagement period, which disappears soon after marriage.

PHYSICAL SIGNS OF SYPHILIS

In 75 percent of syphilitics the Wassermann test is negative. Look for physical signs, such as: leukoplakia, external strabismus, characteristic dental conditions, interstitial keratitis, papillary paralysis, fissure-scars at the angles of the mouth, local patches of white hair, absent knee-jerk, Romberg's sign, defects and ulcerations in the nose, bone changes, rectal stricture, condylomata, etc.—DR. CARLTON DEEDERA, of New York.

ENDOCRINE DYSFUNCTION AND DEAFNESS

In more than 50 percent of cases of progressive, systemic deafness there is a demonstrable endocrine dysfunction. Of 26 endocrine cases studied, 9 were of pituitary origin, 6 were gonadal, 3 were thyroid and 8 unclassified.—DR. DANA W. DRURY, in *Bost. M. & S. J.*

THE UVULA IN DIAGNOSIS

Several diseases of the digestive organs show early signs in the soft palate. The changes mentioned are most pronounced at the angles where the uvula joins the hard palate.

Icterus:—Yellow color shows early in the uvula. Least marked and persistent in catarrhal jaundice and most in parenchymatous disease of the liver.

Acute Pancreatitis shows a bronze discoloration of the uvula. This sign, both negative and positive, has several times been confirmed at autopsy.

Duodenal Ulcer: In duodenal ulcer the uvula is distinctly hyperemic; while in gastric ulcer and appendicitis it is normal or rather pale.—DR. PAUL NEUDA, of *Vienna, Austria.*

GASSY INDIGESTION

The complaint of "gassy indigestion" and "heart spells," in middle-aged or elderly women, generally indicates a chronic inflammation of the gall-bladder and appendix. The best treatment is to remove these organs.—DR. A. R. CAMPBELL, *Yarmouth, N. S.*

COUGH

Cough may be produced by irritation of certain parts of: (1) the respiratory passages; (2) the pleura; (3) the mediastinum, and (4) the external auditory canal.

Painful, dry cough is a cardinal symptom of acute pleural disease. It is an outstanding phenomenon in mediastinal disorders involving the inferior laryngeal nerve, as in aneurism of the arch of the aorta. Ear cough is rarely diagnosed by the general practitioner, though often very distressing.

Extra-pulmonary cough is almost always injurious and the diagnosis calls for great care.—DR. F. J. KALTEYER, in *Ill. M. J.*

ENDOCARDITIS

In cases of endocarditis the presence of severe secondary anemia and definite enlargement of the spleen suggest the subacute, bacterial type, in which the occurrence of embolism is most common.—DRS. CLAWSON and BELL, in *Arch. Int. Med.*

GLYCOSURIA IN PREGNANCY

Glycosuria is frequently found in pregnant women and may be due to true diabetes or to the fact that the woman has a low renal threshold for sugar. The former type requires active treatment; the latter is transitory and of small amount. It is important to differentiate so that the woman with diabetes may be treated and the one with renal glycosuria may not be frightened and starved.

An estimation of the blood sugar, 2½ hours after a heavy meal of carbohydrates, will clear the diagnosis. If it is above 160 mgm. per 100 cc. of blood the case is one of diabetes; if below 90 mgm. per 100 cc. you are dealing with renal glycosuria.—DR. HENRY J. JOHN, in *Surg. Gyn. & Obst.*

INHERITANCE OF EPILEPSY

In a series of 607 cases of epilepsy the same disease was found to have occurred in the parents in only 2.4 percent of the cases. This agrees with the findings of other observers.

Direct inheritance probably plays a small part in the etiology of epilepsy and the sterilization of epileptics would therefore do little to reduce the incidence of this disease. —DR. N. R. SMITH, of Ann Arbor, Mich.

EARLY GASTRIC CANCER

The roentgen demonstration of a caloused gastric ulcer exceeding 2 cm. in diameter, associated with a history of frequently recurring ulcer symptoms and with blood *constantly* present in the stools (by chemical test) form a clinical hint for malignancy which cannot be disregarded.—DR. FRANK SMITHIES, of *Chicago.*

STERILITY

No gynecologic operations should be performed for the relief of sterility until the male element has been examined. In 27 percent of these cases the condition is due to defects of the sperm; and remember that semen deficiency is a *relative* term.—DR. R. L. DICKINSON, of *New York.*

CORPUS LUTEUM CYSTS

An ovarian cyst, which can be demonstrated by palpation and even by radiography, and which disappears after a few days or weeks, is almost certainly a corpus luteum cyst and requires no surgical treatment. It must be differentiated from ectopic pregnancy and true cystoma.

The fact that such "disappearing cysts" do occur makes it dangerous to arrive at a final diagnosis after making only one examination.—DR. N. S. HEANEY, of Chicago.

BASAL METABOLISM TESTS

When a patient is to have a basal metabolism test it is essential, not only that he arrive at the hospital in a basal condition and have an hour or more of rest, but that he be moved from the rest room to the testing room in an orderly and quiet manner. Noises, jolts and other disturbances may result in a difference of 25 or 30 points in the reading obtained.—*Sanborn Technical Bulletin.*

Current Medical Literature

ACETARSONE IN AMEBIC DYSENTERY

Many physicians think of amebic dysentery as essentially a disease of the tropics, but there are probably few states where cases do not occur every year. These can be diagnosed only by *repeated* examinations of the stool in all *suspicious* cases.

Dr. Phillip W. Brown, of the Mayo Clinic, in an article in the *Illinois M. J.* for May, 1926, emphasizes the importance of recognizing and treating these cases and states that he believes stovarsol (acetarsone) is more effective against the *Entamœba histolytica* than are the older methods of treatment.

He gives 0.25 Gm. of acetarsone three times a day, with meals, having the patient chew the tablet with the food. This is continued for 6 days, after which the patient rests for 10 to 14 days and then takes two tablets a day, in the same manner, for 9 days. Results have been satisfactory and untoward symptoms few.

Dr. Brown sums up the situation as follows:

1.—The wide distribution of *Entamœba histolytica* must be appreciated by both physicians and public health authorities.

2.—Emetine continues to be an invaluable drug in the treatment and seems to be particularly effective in rapidly controlling most of the acute phases of endamebiasis.

3.—The organic arsenical compounds would seem to be more effective in eradicating the parasite than are ipecac and its derivatives.

4.—The possibilities of cure depend more on persisting with varying types of treatment rather than on any one drug.

5.—From a small series of cases of ulcerative amebic proctitis, the indications are that recurrence is more likely in this group than in those without gross ulcerative lesions.

6.—Much is yet to be desired in the treatment of the persistent and chronic phases of the disease.

MILK INJECTIONS IN PELVIC INFECTIONS

In the *M. J. & Rec.* for February 17, 1926, Dr. Julius Jarcho, of New York, sums up his experience with the use of intramuscular injections of boiled milk in the treatment of pelvic infections as follows:

"Injections of milk were made preferably in the gluteal region. The initial dose was 5 cc. (in very sick patients even less), and other injections followed at intervals of three to five days until all signs of the lesion disappeared or until the localization and improvement of conditions indicated operation. In my series of cases each patient required from three to eight injections.

"In cases that ultimately require operation, a preliminary course of milk injections localizes the process, renders operation easier and makes that postoperative course not nearly so tempestuous as is usually the case. Most of the patients did not exhibit severe reactions, the leucocytosis being not excessive and the course being entirely undramatic. Despite this, great strides were made toward recovery. Hence I infer that severe reactions after injection are not essential for cure. The physician must not forget fresh air, diet, or other supplementary methods of treatment.

"The injection of milk proved to be of great value in my cases of pelvic infection and I recommend it to clinicians for further observation and study."

SPECIFIC VACCINES IN ASTHMA

The use of bacterial vaccines in the treatment of asthma has been rather disappointing to most physicians, and the reason for this seems plain after reading the paper by Drs. Myer Solis-Cohen and A. I. Rubenstone, of Philadelphia, in the *Ann. of Clin. Med*, for January, 1926.

Upon the assumption that those bacteria against which the patient has developed antibodies will be relatively harmless to him, these workers grow cultures from the patient's infected areas in his whole blood, and then transfer these, after 24 hours, to ordinary culture media. In this way, the organisms which the patient is fighting successfully will be inhibited by the antibodies in his blood; while the others, which are, presumably, causing his illness and distress, grow freely.

Vaccines are made from the cultures thus obtained, and these are administered with great care, beginning with very small doses —5,000,000 to 25,000,000 killed organisms— and increasing the dose very gradually on the basis of the reactions shown by each patient. They consider this individualization of dosage highly important.

In summing up the results of their work they come to the following conclusions:

1.—Bacterial infection of some portion of the upper respiratory tract usually exists in asthmatics, frequently in association with visible pathological change in the infected tissues, but sometimes in the absence of any macroscopic lesion, and it may persist even after the removal of recognized abnormal tissue and the washing out or aeration of infected paranasal sinuses.

2.—Such bacterial infection can be overcome only by the restoration of sufficient bactericidal or bacteriostatic power to the patient, which in the markedly lowered resistance of most asthmatics, can best be aided by the proper injection of the specific

antigen required, after recognizable diseased tissue has been removed.

3.—The specific antigen may be lacking in vaccine as ordinarily prepared, inasmuch as the organisms predominating an ordinary culture media may be nonpathogenic for the patient, while on such culture the etiologic organism may fail to grow or may be present in comparatively small numbers.

4.—The pathogen-selective method of culture picks out the organisms that are pathogenic for the patient and exaggerates their growth, while inhibiting the growth of or destroying organisms that are nonpathogenic for him.

5.—Specific vaccine is of maximum efficiency when made chiefly from those organisms which, on pathogen-selective culture, grow well in the patient's whole, coagulable blood.

6.—To be properly administered the dosage of vaccine should be regulated according to the general, focal and local reactions produced.

ANEMIA AND RENAL INSUFFICIENCY IN CASES OF HYPERTENSION

Drs. S. F. Adams and G. E. Brown, of the Mayo Clinic, believe that there is a definite relationship between the percentage of red cells and hemoglobin in the blood of patients with arterial hypertension, and the condition of the kidneys.

In the *Ann. of Clin. Med.* for December, 1925, they present a study of 76 cases of essential and malignant hypertension which they have studied from this viewpoint, and summarize their work as follows:

In 60 percent of cases of benign and malignant hypertension with arteriosclerosis but adequate renal function the hemoglobin is more than 100 percent. In 90 percent of cases of hypertension with arteriosclerosis and renal insufficiency, as indicated by retention of nitrogen, the hemoglobin and erythrocytes are diminished. This study seems to show that there is a close parallelism between erythrogenic and renal function in cases of hypertension, similar to that found in glomerulonephritis. In cases of hypertension with arteriosclerosis during periods of renal failure, the hemoglobin and erythrocytes are diminished. The recovery of the blood does not parallel the recovery of renal function. The presence of anemia in cases of complicating disease or gross loss of blood is good evidence of existing or preexisting renal insufficiency.

TESTICULAR AND PROSTATIC TRANSPLANTS

Dr. H. Lyons Hunt believes that the prostate plays a definite part in determining sex activities, and he is also convinced that the transplantation of the fresh gonads of the lower animals causes measurable results in restoring or augmenting physical and mental as well as sexual activity.

In *Endocrinology* for November-December, 1925, he shows that the socalled hypertrophy of the prostate which occurs with advancing years is, in reality, a *hypertrophic atrophy*, and that this condition occurs with the onset of impotence or diminished sexual function too often to be mere coincidence.

Dr. Hunt has made gonadal transplants in more than 300 cases, using testicles from bulls and rams and ovaries from sheep, and states that he has obtained successful results in 80 percent of cases.

By "successful results" he does not always mean restoration of sexual power, for he states that there are seven main effects which can be expected from gland transplantation:

1.—Effect on the sex organs.
2.—Effect on general metabolism.
3.—Effect on mentality.
4.—Effect on special senses (sight, hearing).
5.—Effect on voluntary muscles.
6.—Effect on involuntary muscles.
7.—Effect on peripheral nerves.

In 80 percent of his cases one or more of these primary effects has been produced.

The doctor had some difficulty in obtaining a prostatic extract suitable for hypodermic use (the extract given by mouth had failed entirely), but when he had obtained it and injected it into patients who had received glandular transplants without any improvement in the sexual powers, the *combination* promptly brought about the desired result in every case.

The article reports in some detail the results of transplants made upon physicians and members of their families, to the number of 11 cases, and these results should be especially interesting and instructive because of the high mental level of the subjects and their unusual equipment for noting and understanding effects produced.

THE TREATMENT OF ENEURESIS

Dr. M. K. Wylder, of Albuquerque, New Mexico, feels reasonably sure that the various drugs recommended for the treatment of eneuresis produce little or no effect, and that the only way to obtain a cure is to enlist the cooperation of the patient by talking the matter over with him, freely and frankly, and assuring him that a cure is possible.

The parents must be cautioned not to scold or punish the child if he wets the bed, but to give him all possible encouragement.

The sphincter muscles may be strengthened and educated by telling the patient that when he goes to urinate he shall suddenly shut off the stream by a muscular action, start again and stop again, and continue as long as any urine remains in the bladder.

The child should rest for two or three hours in the afternoon; take no fluid after 4 P. M.; empty the bladder before retiring; and be awakened before midnight for another emptying.

A strong and beneficial psychic effect is produced by hanging a large calendar on the child's wall and furnishing him with red and gold stars. Each night when there is no bedwetting he pastes a gold star on the

calendar; the wet nights being represented by red stars. This gives him something definite to strive toward, and as the gold stars increase in number he is encouraged and his will is strengthened.

Aside from cases of malformations, neoplasms, spina bifida and the like, Dr. Wylder believes that eneuresis is a habit condition, and that, with sympathy, encouragement and proper régime, the habit can be broken.

POISON IVY EXTRACT

Poison ivy grows in all parts of the country and poisoning with this plant occurs very frequently in the summer.

Dr. Ralph O. Clock, of Pearl River, New York, has made a considerable study of the subject and reports his results in the *Ann. of Clin. Med.* for January, 1926.

As a method for specific treatment, Dr. Clock has found a 1-percent solution of the acetone-soluble extract of *Rhus toxicodendron* in olive oil to be most satisfactory.

In injecting this extract care must be taken that it does not come in contact with the skin, as it may cause typical rhus dermatitis. For this reason it is put up in syringes which can be discarded after use.

One intramuscular injection of 1.0 cc. of the extract usually gives relief, but 2 or 3 injections may be given at 24-hour intervals, if necessary.

As to local applications he suggests a 2-percent, alcoholic solution of lead acetate or a 5-percent solution of ferric chloride. Local treatment is, at best, relatively ineffective.

In summing up his findings Dr. Clock concludes that:

1.—All persons are susceptible in some degree to poison ivy.

2.—Actual contact with the sap of the plant is necessary to produce Rhus dermatitis, but such contact may result through some intermediary agent which carries the sap.

3.—Alcoholic extracts of poison ivy cause painful local reactions, which are undoubtedly due to the high percentage of alcohol used to hold the active principle in solution.

4.—Poison ivy extract in almond oil contains the purified active principle of *Rhus toxicodendron*, freed from coloring matter and inert water-soluble substances.

5.—Laboratory tests have shown that the almond oil extract is nontoxic and more potent than any other extract of poison ivy thus far prepared.

6.—Poison ivy extract in almond oil can be injected without pain or local reaction. It should be administered *intramuscularly*, preferably in the deltoid muscle just below the point of the shoulder.

7.—Clinical reports from several states indicate that prompt relief usually follows in twelve to twenty-four hours after the first dose of poison ivy extract in almond oil. Severe cases require 2 or 3 doses.

Better do a good deed near at home than go far away to burn incense.—*Chinese Proverb.*

THE TEETH IN PREGNANCY

The disastrous effect which pregnancy produces upon the teeth of the mother is well known. The extra call for lime in forming the bones of the developing fetus, together with the small quantity of this substance in the average diet is responsible for this condition.

In the *J. Missouri St. M. A.* for November, 1925, Dr. Kerwin states that he gives pregnant women 5 grains of calcium lactate twice a day and insists that they drink at least a pint of milk daily. This assists in furnishing the baby with good teeth and bones, and aids in preseving the teeth of the mother.

If dental work is needed by a pregnant woman it should be done at once, regardless of the duration of the pregnancy.

The obstetrician can help to improve the condition of the teeth of his patients by:

1.—Urging the use of alkaline mouthwashes during pregnancy. This should be done several times daily and especially after each vomiting spell.

2.—Supervising the diet of the pregnant woman and prescribing calcium throughout pregnancy.

3.—Seeking the early cooperation of the pediatrician so as to insure the proper diet for the growing child.

4.—Cooperating with the dentist where the woman shows defective teeth.

WHOOPING COUGH

In *Calif. and Western Med.* for April, 1926, is a very interesting symposium on whooping cough, from the standpoint of the practitioner.

Several of the discussants call attention to the necessity for strict care as to the general hygiene and body resistance. The value of roentgen ray therapy is also mentioned by several, though there are some who question its usefulness. Dr. H. J. Ullman, of Santa Barbara, Cal., thinks it should be used only in the later stages of doses, every other day, alternating front and back, until 4 doses are given. This may be repeated after 10 days if necessary.

Dr. T. C. McCleane, of Oakland, Cal., recommends quinine (1½ grains for each year of the child's age) 3 or 4 times a day. Sodium bromide, belladonna and antipyrin, separately or together, sometimes help. Phenobarbital, 1/16 to 1/8 grain every 3 or 4 hours, and codeine in appropriate dosage do good work. He thinks that a fresh, polyvalent vaccine of the Bordet-Gengou bacillus is often of value, though its action is not uniform. Three to five doses are given on alternate days, beginning with 500,000,000 to 1,000,000,000 and doubling the dose each time if no severe reactions develop.

Dr. Myrl Morris, of San Francisco, recommends the rectal injection of ether in suspension in olive oil. It has been reported that 90 percent of cases thus treated show improvement.

Dr. Hugh Berkley, of Los Angeles (as well as several others), gives semisolid foods in small and frequent feedings.

He believes that medicated steam treatments are beneficial, but does not use a tent.

Dr. Edward J. Lamb, of Santa Barbara, also likes the effect of medicated inhalations (benzoin compound and creosote), and has had favorable results from large doses of fresh Bordet-Gengou vaccines in 60 percent of his cases.

He says that the best drug for controlling the paroxysms is calcidin in doses of 1/3 grain every half hour for 4 or 5 doses, near bedtime.

Several writers mention the possible dangers from cardiac strain and cerebral hemorrhage. Almost all of them stress the voluntary quarantining of school and preschool-children to prevent the spread of infection.

All feel that the laity should be educated as to the seriousness of this disease, especially in frail infants, and the fact that it is not necessary nor best for children to have it.

HEXAMETHYLENAMIN, MERCUROCHROME AND HEXYLRESORCINOL IN PYELITIS AND CYSTITIS

Testing the action of various drugs upon animals is a very necessary procedure in determining the relative values of these drugs in the treatment of certain pathological conditions.

Henry F. Helmholz and Ruth S. Field, of the Mayo Clinic, have carried out an elaborate series of experiments upon rabbits and have reported their results in the *J. of Urology* for April, 1926.

They found that, in the dosages used, hexamethylenamin was superior to mercurochrome and hexylresorcinol as a urinary antiseptic, in cases of infection produced by staphylococcus albus and the colon bacillus, being much more active in staphylococcus than in colon bacillus infections.

PHYSICIANS AND THE VOLSTEAD LAW

The thought of physicians is a fair index of the thought of the better class of our citizenry, and with this idea in view, *Med. Economics* determined to see how the doctors feel about prohibition, as we now have it with us.

The following questionnaire was mailed to approximately 13,000 practicing physicians:

1.—Has prohibition had a good or bad influence on the moral tone of your community?

2.—Has prohibition improved the financial welfare of your patients?

3.—Has prohibition had a noticeable influence on the general health of your patients?

4.—Are you satisfied with present conditions?

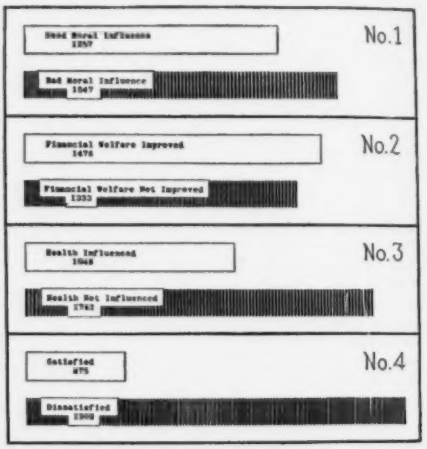
Names were carefully chosen to give a fair cross section and to secure an index of opinion, sectionally, industrally and generally, thus:

A.—*Generally*—All doctors in the capital cities of each state and of Washington, D. C.

B.—*Industrially*—All doctors in textile cities: Passaic, N. J.; Paterson, N. J.; Lowell, Mass., and Lawrence, Mass.; in the steel cities of Youngstown and Canton, Ohio, and in West Virginia for its activity as a coal-mining state.

C.—*Sectionally*—All doctors in the State of Maine for the east, South Carolina for the south and Oregon for the west.

The results of this questionnaire are published in the June, 1926, number and are tabulated graphically.



This does not prove that most physicians want the saloon back—no questionnaire, of course, *proves* anything—but it does give a fair idea of the general trend of thought among the more highly educated and thoughtful strata of our population.

NONSURGICAL TREATMENT OF PEPTIC ULCER

Dr. Frank Smithies, of Chicago, Professor of Medicine, University of Illinois, has contributed an elaborate and scholarly paper to the *Ann. of Clin. Med.* for December, 1925, dealing with the management of cases of peptic ulcer and reporting results in 470 patients treated by his method of "physiologic rest."

Regarding the principles underlying such treatment, he says:

"*Successful nonsurgical* treatment of ulcer *first* demands *careful selection of cases* to be treated. It is indicated only in ulcers associated with little callus, or if calloused, located in portions of the stomach in which stenoses are not likely to result, where surgical procedures cannot be carried out or when callus is associated with clinical and serologic proof of lues.

"The most useful features of what I have suggested with respect to the nonsurgical management of peptic ulcer are:

"1.—The recognition that such ulcer is not a primary gastric or duodenal ailment. Treating it as such, without bearing in mind its systemic or constitutional origin offers little hope of permanent improvement.

"2.—Recognition of the type of ulcer at hand (from the etiological as well as the histological viewpoints) is absolutely essential before any method of therapy can be directed rationally.

"3.—Gastric chemistry plays a comparatively insignificant role both in ulcer production and in delay in ulcer healing. Ulcer dyspepsia is largely the manifestation of abnormal gastric spasms, disarrangement of normal gastric peristalsis and an excessively increased intragastric tension.

"4.—The principles underlying all local treatment of the gastric or the duodenal fault is the fundamental one of giving the injured part *physiologic* rest, and then not interfering with the natural tendency to heal inherent in all body tissue. *By adopting this principle of physiologic rest to the affected part, it will be recognized that I have brought into the nonsurgical therapeutic regimen of peptic ulcer, those essential principles for healing which our surgical colleagues have so effectively proved necessary to the repair of all traumata whether by incision or from extraneous agents.* Whether the surgeon has to deal with an abdominal-wall cut or with a varicose ulcer of the leg, he finds that most rapid and permanent healing follows rest by fixation, suitable posture, favorable temperature, cleanliness and the avoidance of traumata from movement, antiseptics or socalled 'healing' lotions, pastes and powders."

As to the use of medicines Dr. Smithies says that there are three general indications: (1) painful gastrospasms; (2) accumulations of overacid gastric contents, with peristaltic unrest; and (3) pain associated with ulcer progression or perforation.

The *gastrospasms* are usually controlled by the dietary régime, but if not, the chewing of paraffin wax will generally relax the spasm. Antispasmodic remedies such as atropine, belladonna or bromides may be required—the atropine hypodermically and the belladonna or bromides mixed with the nutrient enemas or the food. At times, 10-grain doses of orthoform, in warm water, may exercise a local anesthetic effect. Bismuth and olive oil have not been found useful.

For the relief of *overacid accumulations*, sodium bicarbonate is *contraindicated*. If alkalies are needed it is better to give milk of magnesia in moderate doses.

The acute or prostrating pains of *ulcer extension* and *perforation* are best controlled by keeping the stomach absolutely empty, by morphine hypodermically, by rest in bed and hot compresses to the abdomen. Prompt and skillful surgery offers the greatest hope.

Seeping hemorrhage is an indication for operation, but may be controlled by rest in bed, fasting, relaxing gastric spasm, morphine, and intravenous injections of fresh horse serum.

In *acute hemorrhage*, with vomiting, the treatment is prompt gastric lavage with water at 110° F., rest in bed, morphine, and transfusions of whole blood. Early operation is indicated.

The results of treatment along these lines have been highly satisfactory. Unpleasant symptoms have been largely relieved and a claim of entire cessation of the ulcer process is made as regards 361 (77 percent) of the cases so treated.

An excellent bibliography accompanies this article.

PREMEDICAL STUDIES

An editorial in the January, 1926, *Ann. of Clin. Med.* pleads for a broader and deeper study of the classical languages and the "humanities" by premedical students, and deplores the almost complete substitution of such studies by teaching of the modern languages.

The writer's strictures upon modern graduates in medicine are caustic and to the point.

"They have read so little of the world's good literature that they have acquired no sense of style, no appreciation of literary form, no facility of word using or phrasing, no development of imagination, and no taste. Poor spelling is as common with today's graduates of this system as it was with the medical students of the early nineties. Evidently the substitution of English and a Modern Language has done but little to enable a medical student to handle his own language and that of medical science efficiently."

NERVOUS BREAKDOWN

People who have never had any difficulty in adjusting themselves to their environment are, as a rule, entirely unable to understand the situation in which neurotic persons find themselves. Even physicians sometimes attribute the incapacities of these unfortunates to laziness or a willful desire to escape from duties or responsibilities.

In *Northwest Med.* for January, 1926, Dr. Lewellys F. Barker, of Baltimore, discusses the condition of these sufferers in a thoughtful and sympathetic manner and shows that the light-hearted injunction of the perfectly normal man, that they act, feel and think right, is useless to them because they are *unable* to adjust themselves to their surroundings in the "right" way.

To the layman a "nervous breakdown" is just that and nothing more. The physician is, however, aware that this term may cover at least three widely differing conditions, any one of which may seriously disturb the patient's reactions to life. These are: (1) a *psychoneurotic state* (neurasthenia, hysteria, anxiety neuroses, phobias); (2) a frank *psychosis* (dementia precox, schizophrenia); or (3) *organic disease* of the nervous system (paresis, brain tumor).

A tendency to many of these conditions is frequently inherited; or they may arise as the result of infectious diseases, such as

syphilis or epidemic encephalitis, or chronic poisoning with alcohol, lead or toxins absorbed from the bowel. The stresses and strains of modern life and other psychic and social causes may precipitate these breakdowns.

If we know the possible causes of these conditions we can do much toward preventing them—in the coming generation. The education of children as to the transmission of traits by heredity and the extreme value of *good blood* will probably do more toward improving the stock than premature eugenic legislation could accomplish.

In postnatal life, the cultivation of sound and rational habits of living, as to food, exercise, bathing, rest and such matters, as well as early and purposeful training in *self-control* and the avoidance of infections (especially syphilis) and intoxications (such as alcohol and copremia) would go far to give the individual stability and balance.

The study of child psychology and behavior problems is in its infancy and the idea of periodic physical inventories to discover pathological changes in their incipiency is only recently coming into prominence. It is upon the development and utilization of these agencies that we must depend for the reduction of the appalling number of nervous incompetents which this generation has produced.

ACETARSONE IN MALARIA

In *Il Policlinico, for* November, 1925, Drs. F. Valentini and E. Tomaselli report results from the use of stovarsol (acetarsone) in the treatment of various forms of malaria.

They feel that in the tertian and quartan types it is equal to quinine for controlling the paroxysms; but that quinine is decidedly superior in the aestivo-autumnal infections.

The patients are reported to have tolerated the acetarsone very well, one case having received large doses over a long period of time.

EPHEDRINE IN ASTHMA

In the *Can. M. A. J.* for April, 1926, Dr. H. E. McDermot, of Montreal, reports results from the administration of ephedrine to a group of 20 asthmatics from 14 to 60 years of age.

In most cases the relief of the paroxysm was almost as prompt and positive as that following a hypodermic injection of epinephrin, coming on in from two to five minutes after swallowing a capsule and giving a comparable feeling of relaxation and relief.

These results were much more lasting than those following the use of epinephrin, which gave relief for only an hour or two, while ephedrine produced freedom from distress for six to eight hours.

Careful observation showed that there was little or no effect upon the blood pressure. In a few cases, following the larger doses, there were sensations of quivering and nervousness, headache, giddiness and thirst. These passed off within an hour or less.

The dosage must be suited to the patient. In some cases 25 mgm. is sufficient to produce the desired effects, while in others 50 mgm. is required. It is best to begin with 25 mgm. and repeat the dose, if necessary.

Dr. McDermot's experience has convinced him that ephedrine produces marked antispasmodic effects in asthma, which last much longer than those produced by epinephrin; and that the drug may be given repeatedly, over long periods, without untoward effects.

FUNCTIONAL EPIGASTRIC DISTRESS

In discussing the causes of epigastric distress of functional origin, in the *Can. M. A. Jour.* for Feb., 1926, Dr. Alexander McPhedran, of the University of Toronto, remarks that it has little relation to the acidity of the gastric contents but arises from irritation of the spinal centers, and that the gas belched is frequently nothing but air which has been swallowed.

An irritatable nervous temperament is, he believes, at the bottom of many of these cases, the trouble being precipitated by the absorption of toxins from foci of infection in any of the usual (or unusual) situations, by eye-strain or by worry, either about the condition itself or regarding business or social matters.

In treating these cases the doctor recommends the removal of all physical causes of irritation and, so far as possible, of all causes of worry. The diet should be free from potatoes, white bread and sugar and should contain vegetables and other foods which encourage regularity of the bowels. Sodium bicarbonate, magnesia or other antacid may be given as needed.

What the patient frequently needs most is a prolonged period of rest, or frequent short periods (if he is leading a very strenuous life); and the physician should make every effort to gain his confidence so that he will accept suggestions and obey orders willingly.

These cases must be carefully studied to exclude organic disease, and roentgenographic examinations are frequently helpful.

Treatment should be individualized and generally consists simply in a rearrangement of the physical and mental habits to conform to hygienic standards, and sympathetic reassurance by the physician.

PROPHYLAXIS OF VARICELLA WITH CONVALESCENTS' SERUM

While chickenpox is not ordinarily considered a serious disease, it causes many fatalities among very young or frail children and in institutions, so that a method for preventing or ameliorating it should prove valuable.

Drs. A. G. Mitchell and S. F. Ravenel report, in *Arch. Pediat.*, for November, 1925, their experience with 68 persons who had been exposed to the disease and of whom, after receiving injections of serum from varicella convalescents, only 3 developed it.

The serum used was obtained, within 10 to 14 days after the onset of varicella, from adults who had negative Wassermann reactions. Properly preserved and sealed in glass tubes, it kept its potency for eleven months, if kept in the ice box.

These workers conclude that

1.—Varicella convalescents' serum has sufficient protective power against the disease to warrant its collection and employment in prophylaxis in hospital wards and in the case of children whose nutritional state or general health is poor.

2.—In view of the uncertainty of dosage and the lack of knowledge of the quantity of protective bodies present it is probable that more than 4 cc. of convalescents' serum should be injected intramuscularly.

3.—Varicella convalescents' serum should be given when possible within 3 days after exposure to the disease.

4.—The temporary immunity conferred by varicella convalescents' serum possibly lasts for as long as 50 days.

ASTHMA DUE TO GRASS POLLENS

Dr. J. S. Kahn and Emma M. Grothaus, of San Antonio, Texas, have pretty well convinced themselves that many cases of perennial asthma are due to sensitiveness to the pollens of various grasses. Their work is reported in the *M. J. and Rec.* for March 3, 1926.

They have discovered, too, that a negative or very weakly positive intradermal test with these pollens is often present in cases whose nasal and bronchial mucous membranes are extremely sensitive to them, and they describe and recommend a form of hypodermic test which they believe to be more accurately diagnostic.

In cases where the clinical or hypodermic reactions have been suggestive of grass sensitiveness, desensitization with these pollens has, in many instances, given marked relief.

IMPOTENCE IN THE MALE

Dr. Max Huhner, of New York, feels that much nonsense has been written on the subject of impotence, and that there is a general feeling, by no means entirely confined to laymen, that there is something mysterious about the genital organs which exempts them from the operation of the general laws of physiology.

In the *Ann. of Clin. Med.* for December, 1925, he says that, with regard to the other muscular structures of the body, we all fully realize that fatigue and congestion are indications for *rest;* but when the male genitals are in an exhausted and inflamed condition, many physicians still continue to *stimulate* them and recommend that they be exercised.

Dr. Huhner does not take much stock in "psychic impotence," believing that most cases are largely physiologic in origin.

The exhaustion and congestion are not always—nor even most commonly—the result of excessive normal coitus, but frequently follow the unrelieved turgescence of the parts, consequent of active or prolonged sexual play, or "spooning," without intercourse, or the reading of highly erotic literature or indulgence in abnormal sexual habits.

The local congestion leads to abnormal sensitiveness of the structures themselves, and probably also, of the cerebral centers concerned, and this results in rapid or premature ejaculations upon very slight stimulations. Such conditions are a warning of trouble to follow, and if the organs are still exercised, impotence frequently results.

The treatment recommended is the same as that for similar conditions in the other organs—*complete physiological rest*, including the avoidance of all causes of sexual excitement. Bromides may be given and the diet restricted to bland and easily digested foods to assist in attaining this end.

The local treatment consists in *gentle* prostatic massage (*not* expression), followed by the instillation into the prostatic urethra of 1:3000, increasing to 1:500, solutions of silver nitrate. Stronger solutions should not be used for this purpose. When the prostate feels normal to the touch and the instillations no longer cause pain, the congestion has subsided and the time for stimulation has come.

For the developing treatment Dr. Huhner uses the sinusoidal faradic current, of moderate strength, with one electrode in the rectum and the other on the perineum, changing later to one which envelops the entire penis. The bromides are discontinued and all dietary restrictions removed.

He has not had satisfactory results from the use of glandular extracts in impotence.

APPENDICITIS IN CHILDHOOD

Dr. Stanley J. Seeger studies 61 cases of appendicitis in children, operated upon at the Milwaukee Children's Hospital, in *Surg. Gynec. and Obst.* for April, 1926, and concludes that:

1.—Appendicitis is rare in the first two years of life.

2.—There is a tendency to early perforation in appendicitis occurring in children.

3.—With few exceptions appendicitis in early life should be treated surgically at whatever stage the patient is seen.

4.—The McBurney incision is the incision of choice because it gives rapid and bloodless access to the appendix and as a rule very little intraabdominal manipulation is required when this incision is used.

5.—Dehydration is an important factor and should always be considered in the preoperative and postoperative management of these children. It is best combated by the subcutaneous administration of fluids.

New Books

POE: GENERAL ANESTHESIA

GENERAL ANESTHESIA. A Text Book for Students and Practitioners of the Art of Anesthesia. *By James G. Poe, M.D., Lecturer on General Anesthesia in the Medical and Dental Departments of Baylor University; Chief of Anesthetic Staff of Baylor Hospital, Dallas. Dallas, Texas: James G. Poe, M.D.* 1926. *Price,* $3.00.

Anesthesia is coming, in the large cities, to be regarded as a separate specialty, and highly trained anesthetists are available at all of our great hospitals. In the smaller cities and villages, however, anesthetics must be given by physicians who have had no special training in this procedure, and such occasional anesthetizers need a practical working-manual of the subject. Here it is.

The book deals with the types and degrees of general anesthesia, and describes, in detail, the various stages of a complete anesthesia, mentioning all untoward occurrences with an explanation of their cause and suggestions for obviating them.

Each of the general anesthetics—ether, nitrous oxide, ethylene, carbon dioxide and chloroform—is then considered very fully, with a description of its peculiar properties and advantages and explicit directions for administering it so as to secure the most satisfactory results.

Other chapters deal with the choice of the anesthetic and method of administering it in cases of cardiovascular disease, respiratory diseases, genitourinary diseases and other special conditions; general anesthesia in obstetrics; and pre- and postanesthetic care of patients.

The book is small and light and is substantially bound; the paper is good; the type is large and clear and subheads are freely used, facilitating reference; illustrations are used where needed; the table of contents is detailed enough to take the place of an index.

One of the most practical features of the book is the two charts which summarize an immense amount of information. The first shows, in graphic form, the changes which take place, at all stages of general anesthesia, in the respiration, muscular structures, eye reflexes, pupils, cough reflex, and the special phenomena of light narcosis; the utility of all stages of anesthesia is also indicated. This chart alone is worth the price of the book.

The other chart gives full data regarding the symptoms and signs occurring during nitrous oxide and ethylene-oxygen anesthesia and shows the relative proportions of the gases used at the various stages. This summarizes the knowledge regarding our newest general anesthetics in an excellent manner.

The author is obviously a man who knows his business. He tells the things that the student and practitioner want to know in a clear and straightforward manner. Not a word is wasted in padding to make the volume larger. His suggestions are eminently sound and reasonable and his information is up to date.

Every person who has occasion to administer a general anesthetic should own a copy of this book and should study it until he knows its contents almost verbatim. Especially do we recommend its purchase to every practitioner who gives an anesthetic from time to time. To him it will prove invaluable, as its study will give him a wonderful sense of preparedness and competence.

STIEGLITZ: CHEMISTRY AND PROGRESS IN MEDICINE

CHEMISTRY AND RECENT PROGRESS IN MEDICINE. *By Julius Stieglitz, Chairman of the Department of Chemistry; Professor of Chemistry in the University of Chicago. Baltimore: The Williams & Wilkins Company.* 1926.

This little book embodies the lectures delivered by Professor Stieglitz at Johns Hopkins University. In the book, Stieglitz outlines first the more outstanding advances which have been brought about in recent years by the application of chemical methods and thought to medical problems. In the latter part of the book, the theories of functioning of the common body components, such as calcium, phosphorous, salt, oxygen, carbon dioxide, etc., are discussed, and their applications to various pathological conditions are pointed out.

E. H. V.

SHEARCROFT: MATTER, MAN AND MIND

MATTER, MAN AND MIND. *By W. F. F. Shearcroft. New York: The Macmillan Company.* 1926. *Price,* $3.00.

We have frequently called attention to the advantages which accrue to all people and particularly to physicians by refusing to be bound to the narrow ruts of their particular daily work and by the accumulation of an interesting amount of information on many subjects.

For the man who desires to gain a wide variety of ideas and a large ration of food for thought, we heartily recommend this book. Its author offers no apology for its appearance, stating that he wrote it because he *wanted* to do so, and that he hopes that it will not fill a long-felt want because any fool can write that sort of a book.

He begins with a brief outline of the history of the earth as revealed by the ex-

plorations of the archeologists and geologists, and traces the evolution of matter from the fiery nebulae, up through the ages of marine life, the time of the gigantic reptiles, the ice ages, to the appearance of man.

In discussing the beginnings of human life he shows how the Darwinian theory of the origin of species is incorrect, as each different variety of plant and animal life is *sui generis* from the beginning and is not evolved from some other form of life, but only from earlier varieties of its own particular form.

He then discusses inheritance and evolution and the way in which the various forms have developed from simpler to more and more complex types in order to meet the increasing and expanding demands of life. Man he characterizes as a meddler in the scheme of evolution, and proceeds to show how some of our most astonishing modern inventions, such as the radio, are merely highly ingenious extentions of faculties possessed by all orders of animal life.

The development of the human mind and of those massed and coordinated groups of minds which are known as the tribes or nations is considered in a very lucid and entertaining fashion.

The whole book is written in an easy, flowing and conversational style which makes it as fascinating to read as a novel and more enthralling than most, because it is dealing with matters which are of the highest daily import to every one of us.

We heartily recommend to all our readers that they purchase a copy of this book and read it through once as they would read a story book, and then keep it on their desks for frequent reference in order to impress the many vital facts which it contains upon their memories for future use in connection with their other reading and with the day's events.

RIESMAN: THOMAS SYDENHAM

THOMAS SYDENHAM, CLINICIAN. *By David Riesman, M.D. New York: Paul B. Hoeber, Inc.* 1926. *Price,* $1.50.

A brief and sympathetic story of the life of the great English clinician of the 17th century. Many of us could profit by a study of the teachings and practices of this obscure general practitioner who rose to world-wide fame.

Recommended to those who are interested in the study of medical history.

GARRISON: ANATOMIC ILLUSTRATIONS

THE PRINCIPLES OF ANATOMIC ILLUSTRATION BEFORE VESALIUS, An Inquiry into the Rationale of Artistic Anatomy, *By Fielding H. Garrison. New York: Paul B. Hoeber, Inc.,* 1926. *Price,* $2.50.

A very interesting little collection of ancient anatomical pictures, in painting and sculpture, with a discussion of the conditions under which they were made. The preface is a stimulating bit of philosophizing.

An excellent volume for the student of historical medicine, and an hour or two of interesting reading for anyone interested in the doings of ancient peoples.

COLLECTED PAPERS, HENRY FORD HOSPITAL

COLLECTED PAPERS BY THE STAFF OF THE HENRY FORD HOSPITAL. [First Series 1915-1925.] *With* 151 *Illustrations and* 42 *Charts. New York: Paul B. Hoeber, Inc., Publishers.* 1926.

It has become the custom for all large institutions where laboratory and clinical research is going on, to collect the published papers of members of their staffs and publish them, from time to time, in the form of books. This is such a volume.

The material in this collection is interesting and of permanent value for reference purposes, and large libraries should have it. There are, however, only a few of the articles which possess practical clinical value, and the book is not recommended for purchase by general practitioners.

GEDDES: PUERPERAL SEPTICEMIA

PUERPERAL SEPTICEMIA: Its Causation, Symptoms, Prevention and Treatment. *By George Geddes, M.D., C.M. (Aber.). New York: William Wood and Company.* 1925. *Price,* $4.00

A survey of conditions as regards puerperal infections in the British Isles, where midwives do a good deal of the obstetrical work. A rather elaborate academic and statistical study, of little practical value to the average practitioner in America who attends his patients in labor.

The main point developed seems to be that no physician should attend septic cases of any sort and also carry on obstetrical work. He must choose between the two. In this country we fully appreciate the necessity for surgical asepsis in the lying-in room.

BESANT: SUPERPHYSICAL STUDIES

TALKS WITH A CLASS. *By Annie Besant. Chicago, Ill.: The Theosophical Press,* 826 *Oakdale Ave.* 1922. *Price,* $1.50.

A very interesting discussion of a number of subjects which are of great importance to those who are studying along occult lines. Some of the chapter headings are: The World of Thought, Factors in Spiritual Progress, After-death Experiences of Suicides, Byways of Evolution, Man His Own Recording Angel, Nonphysical Beings, The Roots of Desire, and several others.

This author is always lucid and stimulating, and particularly so in this book where she is talking informally to a group of students of occultism and thus takes a certain degree of familiarity with the subjects she treats for granted. Here the student will find logical and reasonable answers to many of the questions which he has scarcely formulated in his own mind,

because he has felt that they are unanswerable. Whether one accepts these answers as valid or not it cannot fail to set one thinking along new lines.

Here are a few pregnant sentences: "Each one of you, in his own world, is living quite separate from everyone else in *his* own world. You only know the impressions that other people make upon you, modified by your own receptivity. You do not know other people."

"There is always danger that a student, when he begins a study, will forget that a classification is made for use and ought not to tie him down. If instead of using it you let it dominate you it becomes a hindrance."

"Metaphysic which depends upon knowledge gained from the senses is always wrong, because it is always partial."

"There is no such thing, in our world, as an action of consciousness which is unconnected with some form of matter."

"The best way for a scientific man who has become a materialist to get out of it is to study hvonotism, mesmerism and spiritualism. Any one of these will bring him face to face with mental and other *phenomena* which he cannot explain. The tools with which he works are phenomena and he will not leave them. You have to reach him while he is using those tools."

"To the ear, color is unreal; to the eye, music is unreal."

The book is full of things like that and the man who will read it with a reasonably open mind will find his thoughts traveling new highways and will, perchance, lay hold upon some of the ultimate realities.

POTTER-SCOTT: THERAPEUTICS, MATERIA MEDICA AND PHARMACY

THERAPEUTICS, MATERIA MEDICA AND PHARMACY. The Special Therapeutics of Diseases and Symptoms, the Physiological and Therapeutical Actions of Drugs, the Modern Materia Medica, Official and Practical Pharmacy, Prescription Writing, and Antidotal and Antagonistic Treatment of Poisoning. *By Sam'l O. L. Potter, A.M., M.D., M.R.C.P. Lond. Revised by R. J. E. Scott, M.A., B.C.L., M.D. Fourteenth Edition. Philadelphia: P. Blakiston's Son & Co.*, 1012 *Walnut Street.* 1926. *Price*, $8.50.

The usefulness and popularity of this old, standard textbook is suggested by the fact that the present is the fourteenth edition of the work.

It is divided into six sections and an index. The sections are marked by thumb indexes and include: Classification of Drugs, Materia Medica, Incompatibility, Pharmacy, Therapeutics, the Appendix and the Index.

The chapter on materia medica gives the physical, chemical and physiologic properties of all official drugs and many which are not official, as well as its ordinary uses in medicine.

The chapter on pharmacy is intended for the use of physicians who dispense their own medicines. Prescription writing is considered, and a number of interesting prescriptions are included.

In the section on therapeutics, the diseases are arranged alphabetically, and all the drugs and other remedial procedures recommended are printed in boldface type for quick reference.

The appendix contains a long list of Latin abbreviations, with their meanings, and also the narcotic and prohibition regulations, together with tables of equivalents and other matters.

A volume like this is an indispensable part of every physician's library and will be referred to many times a day. It is not intended to be read through. This new edition has been brought up to date to comply with the U. S. P. X. The book is well made and well printed.

BEEUWKES: RUSSIAN RELIEF

AMERICAN MEDICAL AND SANITARY RELIEF IN THE RUSSIAN FAMINE, 1921-1923; American Relief Administration Bulletin, Series 2, No. 45, April, 1926. *By Henry Beeuwkes, M. D., Medical Director, American Relief Administration, Russian Unit. With Chapters on Russian Medical Practice, Epidemics, Deficiency Diseases and Famine Manifestations.* 101 *Illustrations and* 9 *Charts. New York: American Relief Administration*, 42 *Broadway, New York.*

The epidemics following in the wake of Russia's disorganization and famine in 1921 threatened not only the whole population of civilized European Russia, but by spreading across frontiers, those of Eastern and Central Europe as well. The results of the large-scale medical relief in combating epidemics show what can be done by organized effort even when mobilized and put into action on short notice. Uncovering the facts of decline of public health, of agriculture, industry, and welfare, the report carries much valuable source information on conditions in Russia after war, revolution, and four years of social experimentation on a great mass of population.

Cholera among the Russian people had increased over twenty-fold from 1919 to 1921; typhus in Russia, only a nominal menace in 1919, had leaped from 130,000 cases to nearly 3,000,000 in 1920, and again in 1921 threatened to jump far beyond control; relapsing fever, normally not exceeding 30,000 cases annually, reached over 2,000,000. Step by step with these, typhus fever rapidly mounted, doubling and trebling and more, as did malaria, tuberculosis, hunger edema, and other deficiency diseases. Always starvation, hunger, weakness or exposure, insanitation, shortage of even most elementary medicines, made for ideal propagation of almost every catalogued disease.

Upon the initiative of Herbert Hoover, backed by general appropriations by Congress and by the American Red Cross, the comparatively small unit of American physicians, departing at once to Russia, were able to supply overworked Russian physi-

cians and overcrowded hospitals with pitiably needed medicines and supplies. Organizing wide combat of epidemics, and hand in hand with America's $60,000,000 famine relief, this medical unit had not only to supply $8,000,000 worth of medical relief but to get supplies transported over broken-down railways to broken-down institutions, assuring aid at strategic points. The work was in charge of Colonel Henry Beeuwkes, M. D., Medical Director, assisted by Major W. P. Davenport, M. D., both of the United States Army, and about sixty other American physicians from all parts of the United States.

As a necessary preliminary to an understanding of medical conditions in Russia the report opens with a chapter outlining the development of medical practice in Russia from the days of Boris Godunov, through the reigns of Peter the Great and Catherine —the former being himself a physician of sorts—into the Zemstvo organization of rural medicine, and finally down into the present organization of the Soviet Commissariat of Health. Other chapters of the report treat on sanitation in Russia; hospitals, homes and other institutions as the Americans found them; food conditions, starvation and cannibalism, scientifically treated yet gruesome and pathetic in their simple but terrible facts.

A detailed section follows on the aspects of the epidemics which swept Russia, and which must form a fresh contribution for future medical knowledge, both to the administrator and the specialist. How nearly 7,000,000 inoculations were given to those in danger of cholera, typhoid and paratyphoid is a mass demonstration of quite a new advance of preventive medicine.

The second part of the book records the actual carrying out of the American operations—the peculiar problems met during such unprecedented campaigns. It is as interesting to social students and organizers as it must be to the profession. In brief, this is more than the work of one man, or of one organization. It is a record of a distinctly American achievement, and a new addition both to American and to Russian history.

COLWELL AND WAKELEY: X-RAYS AND RADIUM

AN INTRODUCTION TO THE STUDY OF X-RAYS AND RADIUM. *By Hector A. Colwell, M.B. (Lond.), D.P.H. (Oxf.), Directory of the Radiological Department, King's College Hospital; and Cecil P. G. Wakeley, F.R.C.S. (Eng.), F.R.S. (Edin.), Assistant Surgeon, King's College Hospital. London and New York: Humphrey Milford, Oxford University Press.* 1926. *Price*, $3.35.

For students who are taking up the study of radiotherapy and roentgen diagnosis for the first time, and to older practitioners who desire to familiarize themselves with these modern diagnostic and therapeutic resources, an introduction to the subject is essential.

This small volume is in no sense a textbook on x-rays and radium, but is intended to give the student a thorough foundation in the *principles* which underlie their use.

The physics of radioactivity is carefully considered, and also the effects produced upon living tissues by the radiations of x-rays and radium. The preparation, measurement and storage of radium salts, applicators and emanations (radon) are described in full detail. The atomic theory is discussed. Directions for the protection of workers with radioactive substances are explicitly stated. There are three valuable appendices and a good index.

The book is well made in every respect, and ample and satisfactory illustrations support the text throughout.

This manual is heartily recommended to students of all ages who purpose to undertake the use of x-rays or radium, for diagnosis or treatment, and will give them a thorough grounding in the basic essentials which must be grasped before more detailed study and practice can be properly entered upon.

BLANCHARD: BUSINESS OF MEDICINE

BETTERMAN II ON THE BUSINESS OF MEDICINE. *By Charles Elton Blanchard, M.D. Youngstown, Ohio: Medical Success Press.* 1926.

This is a rather interesting, rambling, disconnected and presumably autobiographical account of the various economic shifts and subterfuges—some of them harmless and some actually criminal—to which the average doctor is supposed to be put if he is to make a living out of the practice of medicine.

The author goes into rather complete details of the schemes of "Health Institutes," "Insurance Hospitals" and various other more or less shady byways leading off from the professional highroad, and fully exposes a number of blatant quackeries. He tells of the part that church, hospital and lodge connections play in financial success and how these things are "worked."

As for himself, he felt that it was more honorable to get his business start by means of frankly paid advertisements, whose material was not objectionable, even though the method was frowned upon by the medical authorities.

The general tone of the book is rather pessimistic and depressing, but not more so, perhaps, than the situation merits. We all feel, sometimes, that the condition of things medical is in rather a mess. It may not, however, be so bad as Dr. Blanchard fears.

The solution of the problem he sees in a National Health Service, which will pay an adequate salary to all physicians, nurses and others connected with health work, so that they can eliminate the economic features of their problems and give themselves wholly to the serviceable and altruistic practice of their professions.

A good book to fill in when one is tired of study and hard work. The author may very

probably be wrong on a number of points, but the book will set you to thinking and perhaps you will discover the correct answer.

CUSHNY: BIOLOGICAL RELATIONS OF OPTICALLY ISOMERIC SUBSTANCES

BIOLOGICAL RELATIONS OF OPTICALLY ISOMERIC SUBSTANCES. *By Arthur R. Cushny, M.A., M.D., LL.D., R.R.S., Professor Pharmacology and Materia in the University of Edinburgh. Baltimore: Williams & Wilkins Co.* 1926. *Price, Cloth,* $2.00; *Paper,* $1.00.

This small book, representing the third course of the Dohme Memorial Lectures at Johns Hopkins University, is important, because in its eighty-four pages is summed up, by one of the world's outstanding pharmacologists, our present knowledge of the physiological actions of optically active substances.

In Medicine, these substances are both numerous and important—epinephrin, atropine, hyoscine, sugars, tartaric acid, and many others being representative optically active substances. Very often, one form is more active physiologically than another; thus l-epinephrin is said to be fifteen times more active than the d-form, and l-hyoscyamine is in some cases twice as active as dl-hyoscyamine (atropine).

In this treatise, Cushny critically discusses the physiological actions of optical isomers, together with the theories underlying the observed differences of action. There are so many uncontrollable and erroneous observations in this field recorded in literature that the authoritative treatise by Cushny is especially welcome.

E. H. V.

SANSUM: NORMAL DIET

THE NORMAL DIET. A Simple Statement of the Fundamental Principles of Diet for the Mutual Use of Physicians and Patients. *By W. D. Sansum, M.S., M.D. Illustrated. St. Louis: C. V. Mosby Co.* 1925. *Price,* $1.50.

We must agree with the author of this book when he says, "Diet errors are very common, and such errors are undoubtedly responsible for many minor ailments, as well as some of the more serious ones."

The author states that fully one-half of the sickness that has come under his observation has been due, either directly or indirectly, to the elimination of bulky foods (fruits and vegetables) from the diet.

The book is divided into seven chapters: (1) The Caloric Requirements of the Body; (2) The Protein Requirements of the Body; (3) The Bulk Requirements of the Body; (4) Acidosis; (5) The Mineral Requirements of the Body; (6) The Water Requirements of the Body; (7) The Vitamine Requirements of the Body.

This book is recommended to physicians. It makes pleasant reading and contains much sound information. It is not intended to be a reference book on nutrition.

Because of its readable style, absence of technical terms, and because it deals with disturbances common to many patients, the practitioner will agree after reading this book that it is ideal to recommend to his patients. Public health officers, insurance companies and others interested in health problems and the span of useful life should also be interested in this little volume.

F. J. H.

DUNLAP: PSYCHOLOGY

OLD AND NEW VIEWPOINTS IN PSYCHOLOGY. *By Knight Dunlap, Professor of Experimental Psychology in the Johns Hopkins University. St. Louis: The C. V. Mosby Co.* 1925. *Price,* $1.50.

This little volume contains three lectures and two papers prepared by the author for delivery before societies of specialists in philosophy and psychology and is, therefore, rather too technical to appeal to the average reader, or even the average physician.

The titles of the five articles are: Mental Measurements, Present Day Schools of Psychology, Psychological Factors in Spiritualism, The Psychology of the Comic and The Reading of Character from External Signs.

As might be expected, the author takes no stock in any socalled occult phenomena, believing that when the manifestations are not pure fraud the medium is self-deluded, due to lack of knowledge of mental processes. He feels that there is no basis for the claims that certain "experts" can read character from external appearances.

A book for the student of psychology, as a separate science, rather than for the physician.

FOOTE: DISEASES OF THE NEW-BORN

DISEASES OF THE NEW-BORN. A Monographic Handbook. *By John A. Foote, M.D., Professor of Diseases of Children, Georgetown University Medical School. Illustrated. Philadelphia, London and Montreal: J. B. Lippincott Company.* 1926. *Price,* $5.00.

Over 35 percent of the infant mortality in this country occurs during the first two weeks of life. This fact emphasizes the necessity, on the part of the physician, for an adequate working knowledge of the accidents and diseases which may affect the new-born infant.

Such matters as this are fully treated in the encyclopedic systems of pediatric and of medicine, but many practitioners do not feel able to buy these expensive works. There has been a need for a book of moderate size and price which would deal with this important subject in a brief and practical manner. It is now available.

This moderate-sized and well-made book contains a surprising amount of material which can be used every day by any physician who has the handling of new-born children. All the common defects and deformities are fully discussed, as well as the diseases which affect children at this age.

Separate chapters are given to gastrointestinal conditions, skin affections, acute and contagious infections, the chronic infections—syphilis and tuberculosis, and other natural groupings. The problems of breast feeding and habit formation in the new-born are interestingly dealt with.

The chapter on Methods and Procedures in Diagnosing and Treating Conditions in the New-Born is particularly valuable and is, alone, worth the price of the book.

Most of the illustrations—and there are many—are original and possess the merit of actually *illustrating* the text. They are particularly fine in the chapter on diagnosis and treatment, showing just how the various procedures should be carried out.

The general practitioner who fails to add this book to his library—and to study it assiduously—is doing himself and his patients an injustice, and students and even specialists in pediatrics may well find it a valuable manual for quick reference when time does not suffice to consult more voluminous works.

NEWMAN: EVOLUTION

THE GIST OF EVOLUTION. *By Horatio Hackett Newman, Ph.D. New York: The Macmillan Company.* 1926. *Price,* $1.50

Being interested in science as well as religion, the physician is interested in evolution. Having an open mind, he will enjoy reading this book if he is not already well versed in the study.

The book is intended for popular use. The author has eliminated, so far as possible, technical terms and involved materials so that it makes good reading as well as being interesting and instructive.

During and since the Scopes trial greater interest has been manifested in evolution and especially its relation to religion. Having little opportunity to support evolution at this trial, the author expresses his views in this volume. He is a Christian and is also a firm believer in evolution and expresses his views regarding the lack of any antagonism between evolution and religion.

This book should meet a public demand, and in those states where the study of evolution is prohibited in schools, it should be more popular, in that it is forbidden fruit.

F. J. H.

BALYEAT: HAY-FEVER AND ASTHMA

HAY-FEVER AND ASTHMA. A Practical Handbook for Hay-Fever and Asthma Patients. *By Ray M. Balyeat, A.M., M.D., Instructor in Medicine in the University of Oklahoma Medical School. With 27 Illustrations. Philadelphia: F. A. Davis Company.* 1926. *Price,* $2.00

This little book is intended to be placed in the hands of the patient suffering from hay-fever or asthma to enable him to cooperate more fully with the physician in his treatment. It is, therefore, written in very simple language.

The author takes little or no notice of causes of asthma other than allergy, passing over the interesting work of Adam and Haseltine, but treats the subject of protein sensitization quite fully, emphasizing the necessity for determining, definitely and specifically, what protein—pollen or other—is actually the cause of the symptoms in each case. Without this careful study specific treatment is disappointing.

As a discussion of allergy, for the layman, the book is satisfactory, but it seems to fall considerably short of giving the patient all the information he ought to have regarding the management of these distressing conditions.

HARRIS: NEURITIS AND NEURALGIA

NEURITIS AND NEURALGIA. *By Wilfred Harris, M.D. Cantab., F.R.C.P. Lond., Senior Physician to St. Mary's Hospital and to the Hospital for Epilepsy and Paralysis, Maida Vale. London and New York: Humphrey Milford, Oxford University Press.* 1926. *Price,* $4.00

So many people have aches and pains, and there is so much loose and unscientific talk about neuritis and neuralgia that it is refreshing to see the question handled in a sound, thorough and dignified manner.

Anatomical and physiologic relations are given full attention and the various conditions falling under the title are classified. Diagnosis and treatment are adequately considered.

The various forms of neuritis, involving the various plexuses and nerve groups, trigeminal and other forms of facial pain, migraine and allied conditions, facial paralysis, visceral neuralgias, vasomoter disturbances, herpes zoster and other conditions are gone into in detail.

An interesting, valuable and well-made book, dealing with an important subject. It is indispensable to neurologists and of the highest utility to any practicing physician.

OSLER-McCRAE: MODERN MEDICINE

MODERN MEDICINE; Its Theory and Practice in Original Contributions by American and Foreign Authors. *Edited by Sir William Osler, Bart., M.D., F.R.S. Third Edition, Thoroughly Revised. Re-edited by Thomas McCrae, M.D., Assisted by Elmer H. Funk, M.D. Volume III, Diseases of Metabolism—Diseases of the Digestive System. Illustrated. Philadelphia and New York: Lea & Febiger.* 1926. *Price,* $9.00.

This monumental System of Medicine, now in its third edition, is too well known to the profession to require any elaborate discussion of its many merits. When all the parts have been issued it will form a reasonably complete reference library on internal medicine.

The present volume, which contains over 1,000 pages and includes six splendid, full-page, colored plates showing pathological conditions of the mouth and tongue, deals with Diseases of Metabolism and Diseases of the Digestive System.

Medical News

CHICAGO MEDICAL SOCIETY FREE CLINICS

The Chicago Medical Society inaugurated a new and unusual service this summer. Arrangements were made with the authorities of the Cook County Hospital, who agreed to give two courses of clinics, each lasting two weeks, at no expense to the students. These courses were open to every licensed physician in the State of Illinois, the only requirement being that they should register, in person or by mail, with the Chicago Society. The classes were, of course, limited. Applications were filed in the order received and admission cards were sent until the classes were filled. The courses were greatly oversubscribed.

This is a splendid idea and if the large and powerful medical societies in our great cities, all over the country, would work out a scheme like this they would be doing an immense service to hundreds of practitioners who feel that the expense of a postgraduate course is almost prohibitive.

ENSWORTH-CENTRAL ALUMNI

The second annual meeting and banquet of the Ensworth-Central Medical College Alumni will be held at Kansas City, Mo., October 13, 1926, during Clinic Week. The secretary is Dr. Charles W. Fassett, 115 East 31st St., Kansas City, Mo.

THE SHEPARD-TOWNER ACT

The *Medical Woman's Journal* will shortly begin the publication of a series of articles dealing with the experiences of the various states which are functioning under the Shepard-Towner Act. Those who are interested in this subject will do well to communicate with the Journal at 2334 Upland Place, Cincinnati, O.

CIVIL SERVICE EXAMINATIONS

Applications for Civil Service appointments will be received as follows:

Junior Medical Officer (Interne); salary $1,860 to $2,400; until August 31, 1926.

Graduate Nurse; salary $1,500 to $2,400; until December 1, 1926.

Physiotherapy Aide; salary $1,320 to $2,400; until Aug. 7, Oct. 9, and Nov. 27, 1926.

Full information and application blanks may be obtained from the United States Civil Service Commission, Washington, D. C., or the secretary of the board of United States civil-service examiners at the post office or customhouse in any city.

MEDICAL AND DENTAL ARTS BUILDING, CHICAGO

Work has been started on the new Medical and Dental Arts Building, the architects' drawing of which is here shown.

This building will cover 12,000 square feet of ground at the corner of Wabash Avenue and Lake Street, will be 23 stories high, and will cost approximately $3,100,000.00.

The fifth and sixth floors will contain a two-story auditorium seating about 900, and a number of smaller rooms, to accommodate 150 to 200 each, for the use of the various special medical and dental societies in Chicago.

The 22nd and 23rd floors will be used for club purposes. There will be a large and several small dining rooms, lounging and smoking rooms, library and reading rooms.

Of the remaining 19 floors, the upper eight will be used as offices by physicians and dentists, and the lower 11 for commercial space, preferably by those firms dealing in medical, dental and hospital supplies.

The Medical and Dental Arts Club, which has handled all the financial and other arrangements for carrying out this splendid project, was started slightly over two years ago, and the work of its promoters speaks for itself. Dr. John S. Nagle is president of this club and Dr. Frederick R. Green is its secretary.

When this building is completed (the work is expected to require about a year) it will become the center of the professional and social life of the city and the surrounding country.

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AN INDIAN DOCTOR OF DIVINITY

James Hayes (left), a full-blood Indian, is the first of his race to have the degree of Doctor of Divinity conferred upon him. Converted to Christianity 40 years ago, the former warrior Chief Joseph, has been a missionary to 25 Indian tribes of the Northwest. Whitworth College, of Spokane, recognized his worth by conferring the degree at the last commencement. Dr. Hayes is shown receiving the degree from Dr. W. A. Stevenson, President of Whitworth College.

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PREPARING RATTLESNAKE ANTIVENOM

Many a person's life has been lost as the result of a snakebite in days gone by. In these days of enlightenment, snakebite antivenom has been developed both in the United States, where there are several "snake farms," and in Sao Paula, Brazil, at which place the first snake farm was started under government subsidy, under the direction of Dr. Vital Brazil.

The Antivenom Institute of America has a branch at San Antonio, Texas, for the preparation of rattlesnake antitoxin, with Col. M. L. Crimmons as curator. Only recently a man's life was saved at Ithaca, N. Y., when serum was rushed from New York City after a rattler had bitten him.

The photograph shows Col. Crimmons getting a good grip on a rattler, just prior to extracting the venom.

RESEARCH ON SLEEP

In 1924 the Simmons Fellowship was founded at the Mellon Institute of Industrial Research, University of Pittsburgh, to carry on a broad study of problems in the promotion and maintenance of healthful sleep. Dr. H. M. Johnson and Mr. G. E. Weigand, psychologists, and Dr. T. H. Swan, physical chemist, have been conducting this research

during the past year. Recently Dr. Carney Landis, physiologist, has temporarily joined the personnel of the investigation. It is announced that from now on there will be two separate Simmons Fellowships at Mellon Institute. One of them will continue the research on the physiological and psychological factors of sleep under the supervision of Dr. Johnson. The other Fellowship, held by Dr. Swan, will be concerned chiefly with the subject of bedding materials. This investigational work is being supported primarily for the benefit of the public and consequently the experimental results will be published.

RURAL MALARIA CONTROL

The Rockefeller Foundation has recently announced that plans have been formulated for the control of malaria, which kills 21,000,000 people annually.

Hitherto the control measures in rural districts, where the disease is most prevalent, have been so costly that they have not been properly carried out, but the Foundation has given financial aid to 34 counties in order that they might conduct experiments.

The unit of control, according to the plan announced, is the county, and it will require the services of a full-time health officer and a sanitary inspector, both of whom must have a thorough knowledge of the anopheles mosquito and its ways.

Yellow fever has been practically wiped out and there seems no valid reason why the same thing cannot be done with malaria.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

The Medical Society of the Missouri Valley will hold its 39th annual meeting at Omaha, Nebr., September 15, 16 and 17, 1926.

The Universities of Missouri, Kansas, Iowa, Nebraska and Creighton have promised to furnish a series of short, snappy contributions on subjects applicable to the day's work of the practicing physician. Fully half of the time will be devoted to clinics given by men of national reputation.

This promises to be one of the most valuable medical meetings of the year and all who are able to do so should plan to attend.

Dr. Chas. Wood Fasset, 115 East 31st St., Kansas City, Mo., is the secretary and will send information to those interested.

Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

FF- 83 Yatren-Casein in Non-Specific Protein Therapy. 4-page folder. Ernst Bischoff Co.

FF-156 Facts Worth While Concerning Free Iodine Therapy. 8-page booklet. Burnham Soluble Iodine Co.

FF-227 The Doctor's Factotum. Arlington Chemical Company.

FF-255 Lunosol, by Herman Hille, Ph.D. 16-page booklet. Hille Laboratories.

FF-261 Causes and Effects of Pyorrhea. 32-page booklet. Dentinol and Pyorrhocide Co., Inc.

FF-295 Taurocol Tablets. 4-page folder. Paul Plessner Co.

FF-303 Flit—Destroys Flies, Mosquitoes, Moths, Ants, Bedbugs, Roaches, Other Insects and Their Eggs. 4-page folder. Standard Oil Co.

FF-307 Modern Aspects of Syphilis. 16-page booklet. Battle & Co.

FF-309 The Journal of Organotherapy. 95-page booklet published monthly. G. W. Carnrick Company.

FF-312 The Successful Treatment of Goiter. 15-page booklet. Burnham Soluble Iodine Company.

FF-321 Campho-Phenique in Major and Minor Surgery. Campho-Phenique Company.

FF-328 Internal Bathing. 4-page folder. Huston Bros. Company.

FF-335 Camouflaging Distasteful Drugs. 24-page booklet. Reed & Carnrick.

FF-380 Nativelle's crystallized Digitaline. 8-page booklet. E. Fougera & Co.

FF-394 Rheumatism—Its Modern Conception and Treatment. 14-page booklet. Battle & Co.

FF-398 The Use of Dried Milk, by A. E. Naish, M.A., M.B., Contab., M.R.C.P., Lond. 4-page folder. Dry Milk Co.

FF-400 Organotherapy in E. N. & T. Work, by Henry R. Harrower, M.D. 14-page booklet. Harrower Laboratory, Inc.

FF-401 Magnesium Superoxol. 4-page folder. Merck & Co.

FF-403 Medinal. 4-page folder. Schering & Glatz, Inc.

FF-669 Treatment of Enlarged Tonsils by the Indirect Method, by H. B. Thomson, M.D. H. G. Fischer & Co.

FF-671 Diatussin. Ernst Bischoff Co., Inc.

FF-672 Styptysate. Ernst Bischoff Co., Inc.

FF-675 The Largest Organ in the Body THE LIVER is Usually the Most Neglected and Least Understood. Vass Chemical Co.

FF-676 B. B. Culture Laboratory, Inc. History.

FF-677 The Ideal Tampon. C. B. Moyer & Co.

FF-678 New Semi-Curette and Uterine Evacuator. Huston Bros. Co.

FF-679 The Quartz Lamp, February 15, 1926. Hanovia Chem. & Mfg. Co.

FF-680 Agar of No Consequence in Emulsions of Liquid Petrolatum. Standard Oil Co.

FF-682 A Selected List of Special Formulas. 16-page booklet. Maltbie Chemical Co.

FF-683 Milk Modification for Adult Feeding. Wm. S. Merrell Co.

FF-684 Fischer's Magazine, March, 1926. H. G. Fischer & Co.

FF-685 Theocalcin—A Diuretic and Vascular Remedy. E. Bilhuber, Inc.

FF-689 A Few Notes Regarding Psychoanalysis. 32-page booklet. Fellows Med. Mfg. Co.

FF-691 Mineral Waters Therapeutically Considered. 24-page booklet. Hiram Ricker & Co.

FF-692 Leading S. & G. Products. Schering & Glatz, Inc.

FF-693 What Do the Phagocytes Mean to Your Patients? Carroll Dunham Smith Pharmacal Co.

FF-694 An Active, Harmless Haemorrhagic. Carroll Dunham Smith Pharmacal Co.

FF-696 The Future of Therapeutics, by W. Willard Armstrong, M.D. C. V. Mosby Co.

FF-697 Version, by Irving W. Potter, M.D. C. V. Mosby Co.

FF-740 Intravenous Treatment of Asthma and Hay Fever. 8-page booklet. N. Y. Intravenous Lab.

FF-741 Victor X-Ray Bedside Unit. Victor X-Ray Corp.

FF-742 Medical Pocket Quarterly, July, 1926. 24-page booklet. Reed & Carnrick.

FF-743 The Hormone, June, 1926. 24-page booklet. The Harrower Lab., Inc.

FF-744 The Quartz Lamp, June 15, 1926. Hanovia Chem. & Mfg. Co.

FF-745 A Roentgenological Study of Pluto. French Lick Springs Hotel Co.

FF-746 The Treatment of Genito-Urinary Diseases with Diathermy, by Geo. W. Funck, M.D. 16-page booklet. H. G. Fischer & Co.

FF-747 Rational Phosphorus Therapy. 40-page booklet. Ciba Company, Inc.

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FF-749 Central Society of Physical Therapeutists. T. Howard Plank, M.D.

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FF-751 Infra-Red Rays, by W. D. Chesney, M.D. 16-page booklet. McIntosh Electrical Corp.

FF-752 The Electron, July, 1926. McIntosh Electrical Corp.

FF-753 Storm Binder and Abdominal Supporter. Katherine L. Storm, M.D.

FF-755 The Store of a Sedative Plant. 12-page booklet. John B. Daniel, Inc.

FF-756 Tissue Fibrinogen Clotting, by F. H. Peck, M.D. Wm. S. Merrell Co.

FF-757 Use of Milk in Fevers. Wm. S. Merrell Co.

FF-758 Fischer's Magazine, July, 1926. 24-page booklet. H. G. Fischer & Co., Inc.

FF-759 Victor "Truvision" Stereoscope. 8-page booklet. Victor X-Ray Corp.

FF-760 Basis of Light in Therapy, by Herman Goodman, M.D. C. P. Chemical & Drug Co.